

# THIRD FIVE-YEAR REVIEW REPORT E. H. SCHILLING LANDFILL SUPERFUND SITE

Hamilton Township Lawrence County, Ohio

# PREPARED BY:

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# **Table of Contents**

List of	Acronyms	iv
Execut	tive Summary	v
Five-Y	ear Review Summary Form	vi
1.0	INTRODUCTION	
2.0	SITE CHRONOLOGY	2
3.0	BACKGROUND	
3.1	Physical Characteristics	3
3.2	Land and Resource Use	
3.3	History of Contamination	3
3.4	Initial Response	
3.5	Basis for Taking Action	4
4.0	REMEDIAL ACTIONS	5
4.1	Remedy Selection	
4.2	Remedy Implementation	6
4.3	Institutional Controls	
4.4	System Operations/Operation and Maintenance (O&M)	
5.0	PROGRESS SINCE LAST FIVE-YEAR REVIEW	
6.0	FIVE-YEAR REVIEW PROCESS	
6.1	Administrative Components	
6.2	Community Notification and Involvement	
6.3	Document Review	
6.4	Data Review	
6.5	Site Inspection	
7.0	TECHNICAL ASSESSMENT	
7.1	Question A: Is the remedy functioning as intended by the decision documents?	
7.2	Question B: Are the assumptions used at the time of remedy selection still valid?	
7.3	Question C: Has any other information come to light that could call into question the	
	protectiveness of the remedy?	
8.0	ISSUES	
9.0	RECOMMENDATIONS AND FOLLOW-UP ACTIONS	
10.0	PROTECTIVENESS STATEMENT(S)	
11.0	NEXT REVIEW	19

# Attachments

Attachment 1 List of Documents Reviewed
Attachment 2 Copy of Deed Restrictions
Attachment 3 Site Inspection Checklist

Attachment 4 Newspaper Ad Figure 1 Site Layout Map Figure 2 Site Base Map

Table 1 Groundwater Data 2006

Table 1A Survey Data

Table 2 Comparison of Seep Samples
Table 2A Groundwater Elevations 2005
Table 2B Groundwater Elevations 2006

Table 3 Volume of Water Pumped and Treated from 1993 to March 2007

# Acronyms

Agencies	Ohio EPA and U.S. EPA	ppm	parts per million
ARARs	Applicable or Relevant and	PRP	Potentially Responsible Party
	Appropriate Requirements	RA	Remedial Action
CFR	Code of Federal Regulations	RD	Remedial Design
FS	Feasibility Study	RI	Remedial Investigation
gpm	gallons per minute	RI/FS	Remedial Investigation/
IC	Institutional Control		Feasibility Study
MCL	Maximum Contaminant	ROD	Record of Decision
	Level	Site	E.H. Schilling Landfill
mg/kg	milligrams per kilogram		Superfund Site
NCP	National Contingency Plan	U.S. EPA	United States Environmental
NPL	National Priorities List		Protection Agency
O&M	Operation and Maintenance	μg/L	micrograms per Liter
ppb	parts per billion	VOCs	Volatile Organic Compounds
SVOCs	Semi-Volatile Organic Compounds		<del>-</del>

# **Executive Summary**

The completion of the current five-year review confirms that components of the remedies selected in the 1989 E.H. Schilling Landfill ROD have been implemented and remain effective under the 1991 E.H. Schilling RD/RA Consent Decree and Remedial Action Plan. This is the third five year-review for the E.H. Schilling Landfill.

The remedy for the E.H. Schilling Landfill in Lawrence County, Ohio, included the following components: 1) dewatering and treating approximately 7,000,000 gallons of leachate and liquid waste from the landfill; 2) construction of a 3-acre RCRA Subtitle C cap over approximately 100,000 cubic yards of waste; 3) consolidation under the landfill cap of 500 cubic yards of sediment and 750 cubic yards of soil downgradient from the earthen dam; 4) construction of a perimeter cut-off wall, consisting of a grout curtain for the bedrock and slurry wall for the unconsolidated zones; 5) construction of a clay berm to obtain the required factor of safety of greater than 1.5 for long-term stability of the earthen dam; 6) long-term maintenance, security and restrictions on future land use; and 7) quarterly monitoring of all monitoring wells. The site achieved construction completion with the signing of the Preliminary Closeout Report on August 3, 1993. The trigger action for this five-year review was the actual completion date of the last five-year review which was September 20, 2002.

The assessment of this five-year review has found that the remedy at the E.H. Schilling Landfill Superfund site is protective of human health and the environment in the short term since all known exposure pathways have been eliminated. However, in order for the remedy to be protective in the long-term, groundwater cleanup standards based on Safe Drinking Water Act MCLs, risk-based levels, and State of Ohio criteria for protection of groundwater quality will need to be met, and a Uniform Environmental Covenants Act (UECA) covenant that protects the integrity of the landfill cap and other remedial components, and prohibits Site groundwater use will need to be implemented and maintained. Also, long-term protectiveness requires compliance with effective ICs which are the land use restrictions that prohibit interference with the landfill cap and soil on Site and groundwater use restrictions.

SITE IDENTIFICATION					
Site name (from WasteLAN): E.H. Schilling Landfill Superfund Site					
EPA ID (from WasteLAN): EPA ID# OHD980509947					
Region: 5 State: OH City/County: Hamilton Township, Lawrence County					
SITE STATUS					
NPL status: _X_ Final Deleted Other (specify)					
Remediation status (choose all that apply): Under Construction X Operating _					
Complete					
Multiple OUs?YES X_NO   Construction completion date: 08/03/1993					
Has site been put into reuse? YES _X NO					
REVIEW STATUS					
Lead agency: _X EPA _ State _ Tribe _ Other Federal Agency					
Author name: Scott Hansen					
Author title: Remedial Project Manager Author affiliation: U.S.EPA, Region 5					
Review period: <u>07</u> / <u>11</u> / <u>2006</u> to <u>June 2007</u>					
Date(s) of site inspection: <u>05</u> / <u>01</u> / <u>2007</u>					
Type of review:					
_X Post-SARA _ Pre-SARA _ NPL-Removal only					
_ Non-NPL Remedial Action Site NPL State/Tribe-lead					
Regional Discretion					
Review number: _ 1 (first) _ 2 (second) _X 3 (third) _ Other (specify)					
Triggering action:					
_ Actual RA Onsite Construction at OU # Actual RA Start at OU#_NA					
_ Construction CompletionX Previous Five-Year Review Report					
_ Other (specify)					
Triggering action date (from WasteLAN): 09 / 20 / 2002					
Due date (five years after triggering action date): 09 / 20 / 2007					

#### **Issues:**

- Erosion problems on the face of the dam.
- The Institutional Controls' effectiveness needs to be fully evaluated and Corrective measures implemented, if needed
- Complete the studies that were recommended in the 2002 Five-year review.

# Recommendations and Follow-up Actions:

- Erosion: Completion of the geotechnical engineering tasks, including the evaluation of rehabilitation alternatives to repair erosion along the slope and performance of additional stability analyses. Implement appropriate erosion control measures along the down slope areas below the berm.
- Institutional Controls: Perform IC Study and complete IC Plan.
- Complete Studies: Site-wide collection of groundwater level data under various combinations of pumping and non-pumping conditions. Verify operating conditions and optimize the effective recovery zone for EW-4 across the entire down slope area. Revise the Conceptual Site Model to address the updated understanding of physical and chemical site conditions.

### **Protectiveness Statement:**

The assessment of this five-year review has found that the remedy at the E.H. Schilling Landfill Superfund site is protective of human health and the environment in the short-term since all known exposure pathways have been eliminated. However, in order for the remedy to be protective in the long-term groundwater cleanup standards based on Safe Drinking Water Act MCLs, risk-based levels, and State of Ohio criteria for protection of groundwater quality will need to be met, and a legally effective use restriction that protects the landfill cap must remain in place. Also, long term protectiveness requires compliance with effective ICs which are the land use restrictions that prohibit interference with the landfill cap and soil on Site and groundwater use restrictions.

### 1.0 INTRODUCTION

The United States Environmental Protection Agency (U.S. EPA) Region 5 has conducted a five-year review of the remedial actions implemented at the E.H. Schilling Landfill Superfund Site in Hamilton Township, Ohio. The review was conducted between July 2006 and June 2007. This report documents the results of the five-year review. The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of the review are documented in the five-year review reports. In addition, five-year review reports identify issues found during the review, if any, and make recommendations to address them.

This review is required by statute. U.S. EPA must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA 121(c), as amended, states:

If a remedial action is selected that results in any hazardous substances, pollutants, or contaminants remaining at the site, the remedial action shall be reviewed no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

The NCP part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the third five-year review for the E.H. Schilling Landfill Site. The first five-year review report was completed and signed in September 1997, and the second report was signed in September 2002. Due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure, this five-year review is required.

# 2.0 SITE CHRONOLOGY

Table 1. Chronology of Site Events			
Date	Event		
1969-1980	Landfill Lifetime		
1979	State of Ohio Preliminary Studies		
09/1983	NPL Listing		
05/31/1986	U.S. EPA Removal Actions		
03/31/1987	Administrative Order on Consent signed		
06/22/1987	Fund-lead RI/FS study complete		
08/1/1989	RI report completed		
08/25/1989	FS report completed		
09/29/1989	Final ROD signed.		
04/1990	Settlement reached between four of six PRPs		
05/31/1991	Consent Decree for RD/RA		
02/28/1992	Explanation of Significant Differences (ESD)		
04/17/1992	Remedial Design completion		
06/17/1992	Remedial construction begins		
06/30/1993	Pre-final inspection		
08/03/1993	Construction completion date		
08/03/1993	Extraction system operational		
04/1996	Quarterly sampling changed to semi-annually		
09/29/1997	First five-year review		
09/20/2002	Second five-year review		

## 3.0 BACKGROUND

# 3.1 Physical Characteristics

The E.H. Schilling Landfill site is located in Hamilton Township, Lawrence County, Ohio, approximately four miles southwest of the City of Ironton. It is situated in a valley draw incised into the west slope of a ridge separating Winkler Hollow (west of site) from Schilling Hollow (east of site), 0.8 miles north of the Ohio River, and approximately 0.5 miles north of U.S. Route 52. Vegetation over the landfill consists of poor quality grass and scrubs. The adjacent valley sides are heavily wooded. A tributary of Winkler Run extends from the base of the earthen dam along the valley floor to Winkler Run. The site has rugged topography with high relief. Slopes in the area are generally steep with narrow ridge tops. It is estimated that 23,000 persons live within a four mile radius of the site.

# 3.2 Land and Resource Use

The E.H. Schilling Landfill site was operated during the period of 1969 to 1980. It was created by filling the valley draw with waste, and then constructing a steeply sloping earthen dam, some forty five feet high, in a north-south orientation across the draw to contain the waste. The earthen dam is about sixteen feet wide along the crest.

The current land use of the surrounding area consists of a few residential properties located to the north and east of the site. The Wayne National Forest extends north-south about 400 feet east of the site. The site itself is currently fenced enclosing all soils that have undergone, or are currently undergoing, treatment onsite. In establishing cleanup requirements for the site, U.S. EPA considered the theoretical possibility of residential development of the site.

Bedrock in the area belongs to the Allegheny and Pottsville formations. The bedrock strata reportedly dip eastward at approximately twenty to sixty feet per mile. Three water-bearing zones can be distinguished beneath the site: 1) an uppermost water-bearing zone occurs within the landfill and surrounding soil and bedrock. Flow in this zone from the landfill is primarily westward, towards the embankment; 2) a shallow bedrock water-bearing zone exists within the interbedded sandstone and shale strata. The water-bearing zone is perched on shale strata in the vicinity of the site. Topography and the structural dip of the strata in the vicinity of the site primarily control the groundwater flow direction for the shallow bedrock water-bearing zone; 3) a deeper water-bearing zone occurs in sandstone bedrock. The general groundwater flow direction for this deeper bedrock water-bearing zone is expected to be eastward, based on dip control. Fracture features will also influence flow.

# 3.3 History of Contamination

The landfill was operated by E.H. Schilling and Son, General Contractors, Inc. The landfill began receiving waste in January 1969. It was developed largely as an exclusive landfill for the Dow Chemical plant in Hanging Rock and the USS Chemical (Aristech) plant in Haverhill. In August 1971, the landfill was licensed by Lawrence County to accept non-hazardous dry industrial waste. Records indicate that Aristech Chemical Corporation, the Dow Chemical Company, Ashland Chemical Corporation, Associated Metals & Minerals,

Inc. and Matlack, Inc. deposited hazardous waste at the landfill. During its operation, the landfill accepted a wide variety of hazardous industrial and non-hazardous wastes. The waste consisted of styrene monomer, phenol, acetone, alcohol, wastewater treatment sludge, coal tar compounds, polystyrene, and foam material. Following a series of permit violations, the site ceased operations in July 1980.

Groundwater sampling from extraction wells and monitoring wells was conducted beginning with the fourth quarter (August) of 1993 and is ongoing (most recent sampling round was completed in November 2006). Sampling was conducted quarterly from 1993 through 1996 and semi-annually since then. Analysis of the samples includes volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total metals, and pesticides.

The extent of contamination at the site is limited to the landfill and the area immediately surrounding it. Groundwater data shows that contamination at the site is limited to monitoring wells immediately surrounding the landfill and monitoring wells downhill of the landfill dam.

# 3.4 Initial Response

The U.S. EPA and Ohio EPA involvement dates back to 1979 when preliminary site studies and limited data collection was conducted. In 1983, an Ohio EPA letter identified a number of listed hazardous materials as being present in samples collected at the base of the earthen dam. These samples were taken from soil, leachate, and surface water. At that time, active leachate seeps were noted at several points along the base of the earthen dam.

In September 1983, the site was placed on the National Priorities List (NPL). The final Remedial Investigation/Feasibility Study (RI/FS) reports were released in August 1989.

# 3.5 Basis for Taking Action

During the RI event, two sampling rounds were conducted. The first round of sampling was conducted in the Spring of 1988 for landfill waste, leachate, surface soils, surface water, sediment, benthic organisms, and groundwater. A second round of sampling was performed in Mid-December of 1988 for groundwater, leachate, and surface water.

The results of the RI revealed the following analytical results by media type in the vicinity of the landfill:

Surface Soils

A total of 35 surface soil samples were collected and analyzed for TCL chemicals. The analysis detected the presence of VOCs, SVOCs, seven metals, and cyanide. The extent of contamination of surface soils on the landfill and dam primarily consists of those areas which are exposed to landfill leachate. Contamination of surface soils outside of the immediate landfill area is primarily limited to metals, which occur naturally in this region.

### Sediments

Stream sediment samples were collected at six sample locations. The analysis of the sediment samples for TCL chemicals detected the presence of VOCs, SVOCs, and metals. This analysis revealed that the extent of the contaminated sediments is limited to the mid to upper reaches of Winkler Run.

# Surface Water

A total of six surface water samples were collected and analyzed for TCL chemicals. Test results detected the presence of metals.

### Groundwater

Groundwater samples were collected from the eight monitoring well clusters at the site. The groundwater samples were analyzed for TCL chemicals. Analysis of the groundwater samples detected the presence of VOCs, SVOCs and dissolved metals.

#### Air

Site-specific air quality data were collected and analyzed for total suspended particulates, heavy metals, and VOCs. Test results detected the presence of twenty metals. No VOCs were detected in the air samples collected.

# Baseline Risk Assessment

The baseline risk assessment for the site evaluated the site specific physical and analytical data in characterizing potential risks to human health and the environment in the absence of any remedial action at the site.

Twenty-nine complete human receptor and thirty-seven complete environmental receptor exposures pathways exist at the site based on ten indicator chemicals.

# 4.0 REMEDIAL ACTIONS

# 4.1 Remedy Selection

On September 29, 1989, the U.S. EPA signed the Record of Decision (ROD) that called for the following actions:

- Dewatering and treating of approximately 7,000,000 gallons of leachate and liquid waste from within the landfill. The on-site treatment system consists of metals precipitation using sulfide, air stripping and carbon adsorption.
- Construction of a 3-acre RCRA Subtitle C cap over approximately 100,000 cubic yards of waste.

- Consolidation under the landfill cap of 500 cubic yards of sediment and 750 cubic yards of soil downgradient from the earthen dam.
- Construction of a perimeter cut-off wall, consisting of a grout curtain for the bedrock and slurry wall for the unconsolidated zones. The cut-off wall prevents lateral infiltration of groundwater into the landfill.
- Construction of a clay berm to obtain the required factor of safety of greater than 1.5 for long-term stability of the earthen dam.
- Long-term maintenance, security and restrictions on future land use. In this case, a deed restriction is required as long as the landfill cap is necessary to prevent unacceptable exposure. Furthermore, the deed restrictions for the site dictate that: 1) there shall be not tampering with, or removal of, the containment or monitoring systems that remain on the site as a result of implementation of remedial action under the Consent Decree; and 2) there shall be no other interference with the performance of work and remedial action, or with the maintenance of remedial measures implemented pursuant to the Consent Decree.
- Treat and discharge water under the National Pollution Discharge Elimination System (NPDES) effluent limitations.
- Quarterly monitoring of all monitoring wells. If groundwater exceeds action based levels, groundwater will be collected and treated in the on-site treatment system.
- Cleanup levels are to correspond to the elimination of all cumulative carcinogenic risks greater than 1 x 10<sup>-6</sup> and a remaining cumulative non-carcinogenic hazard index of less than or equal to 1.

The selected remedy uses permanent treatment systems to eliminate the principal threat posed to human health and the environment by extracting the leachate and treating the contaminated groundwater.

# 4.2 Remedy Implementation

On-site remedial activities began on June 17, 1992. The U.S. Army Corps of Engineers (USACE) was used by the agency for oversight of the construction activities by the responsible parties. The responsible parties also used a remedial design firm to ensure the contract specifications were adhered to by the construction firm.

During the RA activities, three major changes occurred: 1) at the start of the construction in preparation for the grout curtain/slurry wall, an area outside the landfill limits was discovered which contained degraded drums and contaminated soil. Approximately 5000 cubic yards of the newly discovered contaminated soil was excavated along with clean surrounding soil and used as fill material to bring the landfill up to grade. The perimeter cut-off wall and landfill cap were extended to near the newly excavated area; 2) pursuant to the ROD, an area

estimated to be approximately 1,300 cubic yards of soil and sediment downgradient from the earthen dam was scheduled to be excavated and consolidated under the landfill cap. After soil and sediment analysis, the volume consolidated increased to 3,070 cubic yards; 3) during the perimeter cut-off wall installation, rock elevation was higher than anticipated which decreased by one-half the length of the slurry wall through the unconsolidated zones surrounding the landfill. In addition, over 3,100 cubic yards of grout was pumped into the bedrock fractures under and surrounding the landfill which was over five times the estimated amount.

For the contaminated groundwater and leachate extraction and treatment system, the PRPs installed a total of four extraction wells (EW-1 through EW-4). A treatment plant was constructed on-site, where the extracted groundwater and leachate is treated prior to discharge to an adjacent creek in accordance with NPDES discharge requirements. The ROD estimated that the groundwater extraction and treatment system would need to operate for a period of 30 years. A final inspection of the groundwater extraction and treatment system was conducted by the U.S. EPA on August 3, 1993. At that time, it was determined that the groundwater and leachate extraction and treatment system was constructed as designed. The system began operation on August 3, 1993.

In August 1993, with the signing of the Preliminary Close-Out Report (PCOR), the U.S. EPA determined that the site achieved construction completion status. The U.S. EPA and the State have determined that all RA construction activities were performed according to specifications. After groundwater and soil cleanup levels have been met, the U.S. EPA will issue a Final Close-Out Report. This will require that all areas of the site with contamination be verified as clean through soil sampling.

# 4.3 Institutional Controls

Institutional controls (ICs) are non-engineered instruments, such as administrative and legal controls that help to minimize the potential for exposure to contamination and that protect the integrity of the remedy. ICs are required to assure the long-term protectiveness for any areas which do not allow for unlimited use or unrestricted exposure. ICs are also required to maintain the integrity of the remedy. The 1989 ROD included the imposition of proprietary restrictions and other institutional controls to prevent future development of the Site and assures the integrity of the remedial action. The restrictions, denominated "Deed Restrictions" were attached to the 1991 RD/RA Consent Decree. As part of the review, U.S. EPA contacted the Lawrence County Recorder's Office to inquire about the restrictions on the E.H. Schilling site. According to the Recorder, the E.H Schilling restrictions are in place. A copy of the restriction is in Attachment 2. While the restriction implemented under the RD/RA decree has served the valuable function of notice, U.S. EPA plans to study whether it would be advisable to implement environmental covenants at the Site under Ohio's UECA. Any restrictions implemented would protect the integrity of the landfill cap, the leachate extraction system and all other components of the remedial action. In addition, the covenant would prohibit potable use of Site groundwater.

The Site is fenced and the gate is locked. The gate is checked as part of the Site operator's daily duties, and the fence is subject to regular inspections. A proprietary use restriction for

the Site property has been recorded. The restriction was intended to prevent the development and use of land within the Site boundary and assures the integrity of the landfill and other components of the remedial action.

Table 2. Institutional Controls Summary Table				
Media, Engineered Controls & Areas that Do Not Support UU/UE @ Current Conditions	IC Objective	IC Instrument Implemented		
Site boundary/ Site area	Prohibits use of land underlying the Site	Deed Restriction attachment to RD/RA CD (Under Review)		
RA Components such as wells, berm, and cut-off wall	Prohibits use of land underlying the Site, and assures integrity of remedy component	Deed Restriction attachment to RD/RA CD (Under Review)		
Subtitle C Landfill	Prohibits use of land underlying the Site, and assures integrity of landfill	Deed Restriction attachment to RD/RA CD (Under Review)		
Groundwater-area that exceeds cleanup levels	Prohibits use of water until cleanup goals are achieved	(Under Review)		

The Site figures attached to this document outline the Site land boundary and groundwater use restriction boundary for the E.H. Schilling Site. Maps which depict the current conditions of the site and areas which do not allow for Unlimited Use/Unlimited Exposure (UU/UE) will be developed as part of the IC evaluation activities or IC Plan.

Initial IC evaluation activities have revealed that additional steps must be taken to evaluate the ICs' protectiveness. For example, a prohibition against groundwater extraction does not appear to be specified in the "Deed Restrictions". Also, additional IC evaluation activities are required to evaluate the effectiveness of the existing proprietary use restrictions and whether an environmental covenant under Ohio's UECA would provide greater protection over time and better enforceability in the future. Therefore, an IC study will be requested from the PRPs including evaluation of a UECA covenant for the landfill cover system, and other remedial components, including the use of Site groundwater. A UECA covenant would also serve to protect against the use of Site groundwater. The IC evaluation activities will also require a title commitment and mapping. It will be necessary to generate a metes and bounds legal description and GIS mapping of the landfill cap and berm area using the final as-built drawings or a survey. It will also be necessary to define a metes and bounds legal description and a GIS map for the area of groundwater contamination using a plume map and to define the extraction and monitoring well network, in order to protect these in a UECA covenant. Once the IC evaluation activities have been completed but no later than 6 months from this Five-Year Review, U.S. EPA will develop an IC plan to incorporate the results of

the evaluation and plan for additional IC activities as needed, including planning for long-term stewardship.

Based on inspections and interviews, EPA finds there is no evidence of a cap breach and the existing use is consistent with the objectives of the landfill cap and land use restrictions. Also, there is no evidence of a groundwater uses at the Site which are inconsistent with the IC objectives.

# 4.4 System Operations/Operation and Maintenance (O&M)

Operation and Maintenance of the Groundwater Extraction and Treatment System is performed by the PRPs in accordance with the Leachate Treatment System Operation and Maintenance Plan. Pursuant to that manual, the effluent from the treatment system is monitored on a monthly and semi-annual basis. Inspections of the physical plant are also carried out during those monitoring events.

Groundwater monitoring has been performed pursuant to the details outlined in the Groundwater Monitoring Plan to ensure hydraulic capture and removal of leachate is occurring and that chemical levels in the groundwater are decreasing. Analyses being performed include the chemicals of concern listed in the ROD and CD and those parameters required under the NPDES discharge requirements issued by the Ohio EPA. The U.S. EPA, in consultation with Ohio EPA, will certify completion of the groundwater remediation once it has been demonstrated that cleanup levels have been attained and maintained for all chemicals of concern listed in the ROD and CD.

Based on the operating flow data, as of March 2007, the groundwater and leachate collection and treatment system has pumped approximately 3.9 million gallons of contaminated water and treated approximately 3.5 million gallons. Since the fourth quarter of 1993, the monitoring network of wells has been sampled quarterly through 1996, and semi-annually since then.

Long-term protectiveness requires compliance with land use restrictions that prohibit interference with the landfill cap and soil on Site and groundwater use restrictions. To ensure compliance with the use restrictions, the O&M Plan may need to be modified to ensure that effective ICs are maintained and monitored and provide for an annual certification. This will be addressed in the IC Study and IC Plan discussed above.

# 5.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

This is the third five-year review for the E.H. Schilling Site. The second five-year review was completed and signed in September 2002. Recommendations during the 2002 review included the following:

Issues from Previous Review	Recommendations/ Follow-up Actions	Party Responsible	Milestone Date	Action Taken and Outcome	Date of Action
An optimization review of extraction rates and review of original dam stability calculations and construction to address its integrity and erosion problem.	Complete optimization review of leachate and GW extraction system. Retain geotechnical engineer to review original dam stability calculations and construction quality. Conduct optional field activities to update relevant site info; this may include a survey, the installation of piezometers, and additional recovery tests.	PRPs	NA	Actions Taken: Site survey, drilling of six test borings and installation of three piezometers, seep sampling and analysis, water level measurements, flow estimates from seep locations, and dye tracer test. Drilling of test borings and installed five piezometers, hydraulic testing of extraction well EW-4, and GW level measurements and flow direction. Outcome: The findings of the Follow-up actions are listed below.	Dec. 2003 to April 2004 October to Nov. 2005

- Complete optimization review of the leachate and groundwater extraction system.
- Retain a geotechnical engineer to review original dam stability calculations and construction quality.
- Conduct optional field activities to update relevant site information; this may include a survey, the installation of piezometers, and additional recovery tests.

The PRPs submitted the *Five-Year Review Follow-up Action Items* report in April 2004. The objectives of the five-year review follow up studies were:

- To install observation piezometers for measuring the groundwater table within the landfill area
- To determine the depth to the static groundwater level and groundwater flow direction with the landfill area
- To observe the hydraulic performance of the landfill recovery wells
- To conduct initial tests aimed at assessing the potential hydraulic connection between the landfill and downgradient areas.

The follow up five year review work at the E.H. Schilling Landfill site began in December 2003 and continued through April 2004. The work included:

- Site survey
- Drilling of six (6) test borings and installation of three (3) piezometers
- Seep sampling and analyses (two rounds for Seep 1 and 2)
- Water level measurements from piezometers and extraction wells
- Flow estimates from seep locations
- Dye tracer test
- Waste handling, testing and off-site disposal.

The following summarizes the findings based on the on the five-year review follow up work completed at the site:

- Shallow groundwater levels and trends within the landfill can generally be measured with the new piezometer network.
- During the study period, shallow groundwater in the landfill occurs from about 19 to 24 feet bgs, depending on location.
- Shallow groundwater flow in the landfill generally flows from east to west during pumping and non-pumping conditions.
- The shallow groundwater within the landfill appears to be unaffected by pumping from extraction wells EW-1 through EW-3. Extraction wells EW-1, EW-2, and EW-3 each have extremely limited radius of influence, indicating inefficient performance.
- The short term results obtained from this study indicate that relatively stable groundwater levels exist within the landfill. This may be indicative of equilibrium conditions, although additional data are needed to evaluate this situation.
- Shallow groundwater levels in the landfill appear to be affected by precipitation, possibly indicating a hydraulic connection with the natural groundwater zone adjacent to or beneath the landfill.
- Downgradient extraction well EW-4 recovers most of the groundwater for treatment at the site, representing over 91 percent of the total flow from 2002 through March 2004.

The PRPs submitted the *Five-Year Review Supplemental Investigation* report in March 2006. The objectives of the five-year review supplemental investigation were:

- Install piezometers for use in observing groundwater within the area below the landfill berm and in the general vicinity of extraction well EW-4. (Prior to installation, there were no piezometers in this area of the site.)
- Determine depth to the static groundwater level and groundwater flow direction within the landfill and the down slope area below the berm.
- Obtain hydraulic test data for EW-4
- Provide lithologic and shallow groundwater data ("piezometric surface" data) to support the geotechnical evaluation at the site.

The supplemental five-year review field work was conducted in October and November of 2005. The field work included:

- Drilling of test borings and installation of five (5) piezometers
- Hydraulic testing of extraction well EW-4
- Groundwater level measurement and flow direction.

The following summarizes the recently completed supplemental investigation work at the landfill, the current knowledge of overall site conditions and the report recommendations.

- Complete the geotechnical engineering tasks including the evaluation of rehabilitation alternatives to repair erosion along the slope and performance of additional stability analyses.
- Implement appropriate erosion control measures along the down slope areas below the berm.
- As a voluntary exercise, collect site-wide groundwater level data under various combinations of pumping and non-pumping conditions. This information will allow for better understanding of groundwater flow conditions, recovery system performance and interactions with the natural groundwater system.
- The investigation indicates that extraction well EW-4 and the downgradient hydraulic barrier appear to effectively capture horizontal groundwater flow in the central down slope area, under current operating (pumping) conditions.

# 6.0 FIVE-YEAR REVIEW PROCESS

# 6.1 Administrative Components

The E.H. Schilling Landfill five-year review was prepared by Scott Hansen, U.S. EPA Remedial Project Manager for the Site. Kris Vanecko, State Project Manager with the Ohio EPA also assisted in the review. The five-year review consisted of a Site inspection and review of relevant documents. The completed report will be available in the Site information repository for public view.

# 6.2 Community Notification and Involvement

The completed third five-year review report and background data will be available in the Site information repository, and the U.S. EPA website for public view. An advertisement notice

regarding the five year-review process was placed in the Ironton Tribune newspaper for public review on April 22, 2007 (See Attachment 4). No public comments regarding the five-year review have been received.

Community relations ongoing at the Site include reporting on the comprehensive operation and maintenance sampling program currently being carried out, to assure that human health and the environment are protected.

#### 6.3 Document Review

E.H. Schilling Landfill site documents reviewed in preparation of this five-year review report includes the following:

- Second Five-Year Review Report, September 2002
- First Five-Year Review Report, March, 1997
- RD/RA Consent Decree, May 1991
- Record of Decision, September 1989
- E.H. Schilling file and monthly progress reports
- Semi-Annual 2006 Groundwater Monitoring Results
- Five-Year Review Follow-up Action Items, April 2004
- Five-Year Review Supplemental Investigation, March 2006

### 6.4 Data Review

Groundwater monitoring has been occurring at this site since November 1993. The *Five Year Review Follow-Up Action Items*, April 2004; *Five-Year Review Supplemental Investigation*, March 2006; and the Second Semi-Annual Groundwater Monitoring Results, January 2007, were the comprehensive reports that were reviewed as part of this five-year review. The reports include the most recent results from the site groundwater monitoring wells along with groundwater elevation data. In addition, seep samples were collected and analyzed.

Sampling was conducted quarterly from 1993 to 1996 and semi-annually since then. Analysis of the samples includes volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Table 1 includes the most recent (2006) groundwater data collected. Table 1A includes the Survey Data completed during the five-year follow up action items. Table 2 includes the Comparison of Detected Constituents in Seep Samples to U.S. EPA Drinking Water Standards and Health Advisories. Table 2A and 2B includes the

Summary of Groundwater Elevations for 2005 and 2006. Table 3 includes the Volume of Water Pumped and Treated since 1993 to March 2007.

Landfill cap maintenance involves inspection and repair of any soil burrowing or erosion locations, and mowing of the landfill surface as needed.

Water treated and discharged at the landfill since 1993 has been regulated under the NPDES discharge requirements issued by Ohio EPA. Samples of effluent are collected prior to discharge and analyzed for VOCs, SVOCs, pesticides/PCBs, total metals, free cyanide, ammonia nitrogen, pH, TSS, BOD, and oil and grease. Historically the discharge has been in compliance with the exception of one exceedance recorded in March 1993, for oil and grease. As a result of this exceedance, carbon filter units were changed out and no problems have been encountered since.

# 6.5 Site Inspection

The inspection at the site was conducted on May 1, 2007. In attendance were Scott Hansen, U.S. EPA; Kris Vanecko, Ohio EPA; Amy Butler, ARSH, Inc; Rob Rouse, Dow Chemical Company; Paul Kilchenstein, RETEC; John Ristow, URS Diamond; James Scherer and Jeremy Blevins, IMC, Inc. The purpose of the inspection was to assess the protectiveness of the remedy, including the presence of fencing to restrict access, the integrity of the landfill cap, and general conditions of the site treatment system.

A walk was taken around the surface of the landfill as well as areas on the face of the dam. Site access is available through a locked gate which encloses the Site landfill and the treatment building. The Site Inspection Checklist is in Attachment 3.

The landfill cap over most of the site appeared to be in good condition and well vegetated. However, soil erosion was noted on the face of the dam. The erosion is most severe near EW-4.

The issue found during the five-year review inspection included:

Erosion on the face of the dam.

# 7.0 TECHNICAL ASSESSMENT

# 7.1 Question A: Is the remedy functioning as intended by the decision documents? Yes

**RA Performance**: The remedies selected in the 1989 ROD have been implemented and remain functional, operational and effective. With continued maintenance and monitoring of the Site hazardous waste cap and groundwater/leachate extraction and treatment system inside the security perimeter fence, the source area remedies will ensure that the Site remains protective.

Cost of System Operations/O&M: Current annual O&M costs are not available since the site is an enforcement lead. The 1989 ROD estimated the annual O&M costs are approximately \$100,000.

**Opportunities for Optimization:** Collection of groundwater level data under various combinations of pumping and non-pumping conditions is needed. This information might allow for a better understanding of groundwater flow conditions, recovery system performance and interactions with the natural groundwater system. The data are needed to understand whether or not additional dewatering of the landfill is feasible.

The installation of additional piezometers and the field testing of selected monitoring wells may be needed to develop a water balance for the site, to support geotechnical evaluations, and to confirm the feasibility of the continued pumping of groundwater from inside the landfill.

In addition, verification of the operating conditions and the optimization of the effective recovery zone for EW-4 across the entire down slope area may be needed. These tasks might include the placement of some laterally positioned temporary observation points, assessing the lithology in the southwest area beyond the slurry wall, tracing the perforated drain pipes that enter EW-4 and possibly adjusting the level control settings at EW-4.

Early Indicators of Potential Remedy Failure: No early indicators of potential remedy failure were noted during the review. Maintenance activities have been consistent with expectations, and groundwater studies are being conducted to best assess the groundwater plume at the Site.

Implementation of Institutional Controls and Other Measures: The 1989 ROD required imposition of proprietary use restrictions and other institutional controls to prevent future development of the Site, and to assure the integrity of the remedial action. Site access and use is restricted with a security perimeter fence. Deed restrictions for the Site property which provide notice of the need to restrict development on the landfill cap and protect the integrity of remedial components have been put in place. However, U.S. EPA plans to study whether an environmental covenant under Ohio's UECA would provide greater protection over time and better enforceability in the future to the landfill cover system, and other remedial components. A UECA covenant may also serve to protect against the use of Site groundwater.

# 7.2 Question B: Are the assumptions used at the time of remedy selection still valid? Yes

Changes in Standards and To Be Considered: Standards outlined in the 1989 ROD and the 1997 & 2002 Five-Year Review Reports are still valid at the E.H. Schilling Site.

Changes in Exposure Pathways: No changes in the Site conditions that affect exposure pathways were identified as part of the five-year review. There are no current or known planned changes in the Site land use. Groundwater studies are being conducted to best assess the Site groundwater plume.

Changes in Risk Assessment Methodologies: Changes in risk assessment methodologies since the second five-year review are not significant and do not call into question the protectiveness of the remedy.

# 7.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy? No

Initial IC evaluation activities have revealed that the ICs may need to be modified to provide long-term protectiveness. No other information has come to light that calls into question the protectiveness of the remedy.

# **Technical Assessment Summary**

According to the data reviewed and the Site inspection, the remedy, including the recorded Site "Deed Restrictions," is functioning as intended by the 1989 ROD. There have been no changes in the physical conditions at the Site, standards, contaminant toxicity or exposure pathways that would affect the protectiveness of the remedy. There is no additional information has been identified that would call into question the protectiveness of the remedy.

# 8.0 ISSUES

The following issues were identified during the five-year review process and the E.H. Schilling Site inspection, and do not impact protectiveness of the remedy.

• Complete the studies that were recommended in the 2002 Five-year review

The following issues were identified during the five-year review process and the E.H. Schilling Site inspection, and impact protectiveness of the remedy.

- Erosion on the face of the dam.
- Institutional Controls

Table 3. Issues that Impact Protectiveness						
Issue	Currently Affects Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)				
Erosion	N	Y				
Institutional Controls A) Need to be Fully Evaluated B) Corrective Measures Implemented, if needed	N	Y				
Need to Complete the studies that were recommended in the 2002 Five-year review	N	N				

Y=yes; N=no

# 9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

	Table 4. Recommendations and Follow-up Actions						
Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	rsight Milestone	1	Affects Protectiveness(Y/N) Current Future	
Erosion	Implement erosion control measures	PRPs	USEPA, Ohio EPA	December 2007	N	Y	
ICs - The ICs have not been fully evaluated. A review of the institutional controls is needed to assure that the remedy is functioning as intended with regard to the ICs and to ensure effective procedures	Institutional Control Study	PRPs	USEPA, Ohio EPA	January 2008	N	Y	

are in-place		<u> </u>	<u> </u>			
for long-term						
stewardship						
at the Site.						
ICs- The Plan	IC Plan	U.S. EPA		January	N	Y
will				2008	14	1
		(with input DEPA and		2008		
incorporate the results of		PRPs)				
the evaluation		rkrs)				
activities and						
plan for						
corrective						
measures as						
needed						
including						
planning for			ļ			
long- term						
stewardship.						
Stewardship.						
Need to	Complete	PRPs	USEPA,	June 2009	N	N
Complete the	optimization review		Ohio EPA			
studies that	of extraction system					
were						!
recommended						
in the 2002			1			
Five-year						
review						
Need to	Complete	PRPs	USEPA,	June 2009	N	N
Complete the	geotechnical	110 5	Ohio EPA		11	
studies that	engineering tasks					
were						
recommended						
in the 2002						
Five-year						
review						
Need to	Collect	PRPs	USEPA,	June 2009	N	N
Complete the	groundwater level		Ohio EPA			
studies that	data					
were			1			
recommended		1				
in the 2002						
Five-year						
review				~		
Need to	Revise Conceptual	PRPs	USEPA,	September	N	N
Complete the	Site Model	<u> </u>	Ohio EPA	2009		

studies that			
were			
recommended			
in the 2002			
Five-year			
review			

Y=yes; N=no

# 10.0 PROTECTIVENESS STATEMENT(S)

The assessment of this five-year review has found that the remedy at the E.H. Schilling Landfill Superfund site is protective of human health and the environment in the short-term since all known exposure pathways have been eliminated. However in order for the remedy to be protective in the long-term groundwater cleanup standards based on Safe Drinking Water Act MCLs, risk based levels, and State of Ohio criteria for protection of groundwater quality will need to be met, and a legally effective use restriction that protects the landfill cap must remain in place. Also, long term protectiveness requires compliance with effective ICs which are the land use restrictions that prohibit interference with the landfill cap and soil on Site and groundwater use restrictions.

# 11.0 NEXT REVIEW

U.S. EPA performs statutory reviews on remedies selected that result in hazardous substances, pollutants or contaminants remaining at sites above levels that allow for unlimited use and unrestricted exposure. Since hazardous substances, pollutants or contaminants are contained and will potentially remain above U.S. EPA and State of Ohio regulatory standards in the future, the E.H. Schilling Site will require ongoing Five-Year Reviews. Therefore, another report is scheduled to be completed five years after the current five-year review in 2012. The completion date of the current five-year review is the signature date shown on the cover attached to the front of this report.

# Attachment 1

# List of E.H. Schilling Site Documents Reviewed for Five-Year Review Report

- Second Five-Year Review Report, September 2002
- First Five-Year Review Report, March, 1997
- RD/RA Consent Decree, May 1991
- Record of Decision, September 1989
- E.H. Schilling file and monthly progress reports
- Semi-Annual 2006 Groundwater Monitoring Results
- Five-Year Review Follow-up Action Items, April 2004
- Five-Year Review Supplemental Investigation, March 2006



Old Friction

#### APPENDIX IV

#### DEED RESTRICTIONS

Earl H. Schilling, owner in fee simple of the real estate described below, hereby imposes restrictions on the real estate situated in Section 9, Township 1, Range 19, and being a part of lot 5 in Hamilton Township, Lawrence County, State of Ohio, except for:

That property situated in Section 9, Township 1, Range 19, Hamilton Township, Lawrence County, Ohio and being a part of the E.H. Schilling & Sons, General Contractors, Inc. 15.08 acre tract as recorded in Volume 509, page 90 and also being a part of the Earl H. Schilling tract as recorded in Volume 418, page 179 of the Lawrence County Deed Records and being more particularly bound and described as follows:

Beginning at a railroad spike (found, September 1990) in the centerline of Winkler Hollow Road, said railroad spike being the westernmost corner of the aforementioned E.H. Schilling & Sons, General Contractors, Inc. tract,

Thence, following along the Westerly property line of said E.H. Schilling & Sons, General Contractors, Inc. tract North 36 degrees 34 minutes 01 seconds East, 231.55 feet to a railroad spike in the centerline of Winkler Hollow Road (found, September 1990),

Thence, South 84 degrees 40 minutes 39 seconds East, 383.03 feet to an iron pin (set, September 1990),

Thence, South 53 degrees 48 Minutes 04 seconds East, 261.26 feet to an iron pin (set, September 1990),

Thence, South 80 degrees 31 minutes 02 seconds East, 322.09 feet to an iron pin (set, September 1990),

Thence, North 57 degrees 40 minutes 56 seconds East, 206.35 feet to a chiseled "X" on rock in small drain (found, September 1990),

Thence, South 70 degrees 40 minutes 48 seconds East, 93.65 feet to an iron pin (set, September 1990),

Thence, South 43 degrees 57 minutes 21 seconds East, 254.25 feet to an iron pin (set, September 1990),

# VOL 0013 PAGE 014

Thence, South 22 degrees 19 minutes 22 seconds East, 89.90 feet to an iron pin (set, September 1990),

Thence, South 15 degrees 51 minutes 37 seconds East, 118.72 feet to an iron pin (set, September 1990),

Thence, South 4 degrees 07 minutes 26 seconds West, 118.51 feet to an iron pin (found, September 1990),

Thence, South 57 degrees 55 minutes 34 seconds West, 54.43 feet to an iron pin (set, September 1990),

Thence, South 35 degrees 26 minutes 06 seconds West, 40.73 feet to an iron pin (set, September 1990),

Thence, South 51 degrees 56 minutes 17 seconds West, 88.76 feet to an iron pin (set, September 1990),

Thence, South 52 degrees 21 minutes 08 seconds West, 91.36 feet to an iron pin (set, September 1990),

Thence, North 71 degrees 10 minutes 00 seconds West, 63.16 feet to an iron pin (set, September 1990),

Thence, South 46 degrees 18 minutes 41 seconds West, 46.99 feet to an iron pin (set, September 1990),

Thence, North 42 degrees 40 minutes 56 seconds West, 76.63 feet to an iron pin (set, September 1990),

Thence, North 41 degrees 54 minutes 20 seconds West, 57.34 feet to an iron pin (set, September 1990),

Thence, North 60 degrees 16 minutes 26 seconds West, 78.39 feet to an iron pin (set, September 1990),

Thence, South 87 degrees 14 minutes 36 seconds West, 118.22 feet to an iron pin (set, September 1990),

Thence, North 76 degrees 11 minutes 25 seconds West, 130.02 feet to an iron pin (set, September 1990),

Thence, North 59 degrees 15 minutes 37 seconds West, 973.56 feet to the ORIGINAL POINT OF BEGINNING containing 15.317 acres, more or less of which 14.089 acres is out of the E.H. Schilling & Sons, General Contractors, Inc. tract as recorded in Volume 509 Page 90, 0.11 acre is out of 3.67 acre tract as recorded in 527, Page 241 and 1.118 acres is out of the Earl H. Schilling tract as recorded in Volume 418 Page 179.

The following restrictions are imposed upon the above-described real estate, its present and any future owners, their authorized agents, assigns, employees and anyone acting under their direction or control, for the purposes of protecting public health and the environment, preventing interference with the performance of work and remedial action, and ensuring the maintenance of the remedial measures pursuant to the Consent Decree in <u>United States v. E.H. Schilling & Son, General Contractors, Inc., et al.</u>, Civil Action no. C-1-90-705, approved by the United States District Court for the Southern District of Ohio on May 31, 1991 (the "Consent Decree"), and are required by paragraph 9 of the Consent Decree:

- 1. There shall be no tampering with, or removal of, the containment or monitoring systems that remain on the above-described real estate as a result of implementation of remedial action under the Consent Decree.
- 2. There shall be no other interference with the performance of work and remedial action, or with the maintenance of remedial measures implemented pursuant to the Consent Decree.

The above restrictions shall run with the land and continue in perpetuity.



# **Site Inspection Checklist**

X

I. SITE INFORMATION					
Site name: E. H. Schillins Landfill	Date of inspection: 5/1/07				
Site name: E. H. Schilling Landfill  Location and Region: Lawrence Co. Ohio Region	EPA ID: 0HD905 89947				
Agency, office, or company leading the five-year review: $\varphi \rho A$	Weather/temperature: Warn, Sunny 8				
Access controls Institutional controls Groundwater pump and treatment Surface water collection and treatment	Monitored natural attenuation Groundwater containment Vertical barrier walls  wy wall bern sceptalledian				
Attachments:   Inspection team roster attached	☑ Site map attached				
II. INTERVIEWS	(Check all that apply)				
1. O&M site managerA	NA 5/1/67  Title Date e no. (412-) 982-4129				
2. O&M staff	e no				

3.	<b>Local regulatory authorities and response agencies</b> (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.					
	Agency Ohio CPA  Contact Kers Van ecks  Name  Problems; suggestions; □ Report attached _	Site Coordinator Title	5/1/67 (740)380-5271 Date Phone no.			
	Agency Codaty Resolv's Office Contact  Name  Problems; suggestions; □ Report attached	N/A Title	5)15 27 (742) 533-4314 Date Phone no.			
	Agency Contact Name Problems; suggestions;  Report attached	Title	Date Phone no.			
	Agency Contact Name Problems; suggestions; □ Report attached		Date Phone no.			
4.	Other interviews (optional)   Report attack					

	III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)					
1.	O&M Documents  O&M manual As-built drawings Maintenance logs Remarks	Readily available Up to Readily available Readily available	o date	□ N/A □ N/A		
2.	Site-Specific Health and Safety Pla  ☐ Contingency plan/emergency resp Remarks	oonse plan		□ N/A □ N/A		
3.	O&M and OSHA Training Record Remarks		Up to date	□ N/A		
4.	Permits and Service Agreements  ☐ Air discharge permit  ☐ Effluent discharge  ☐ Waste disposal, POTW  ☐ Other permits  Remarks	Readily available	☑∕Up to date o date □ N/A			
5.	Gas Generation Records [Remarks]		o date			
6.	Settlement Monument Records Remarks		☐ Up to date	D/N/A		
7.	Groundwater Monitoring Records Remarks		☑Up to date	□ N/A		
8.	Leachate Extraction Records Remarks	Readily available	Up to date	□ N/A		
9.	Discharge Compliance Records ☐ Air Water (effluent) Remarks	☐ Readily available ☐ Readily available	☐ Up to date ☐ Up to date	□ N/A □ N/A		
10.	Daily Access/Security Logs Remarks	Readily available	<b>Up</b> to date	□ N/A		

IV. O&M COSTS						
1.	O&M Organization  ☐ State in-house ☐ PRP in-house ☐ Federal Facility in-house ☐ Other					
2.	☐ Funding mechanism/agreement Original O&M cost estimate	&M Cost Records  Readily available				
	From To	Total cost  Total cost  Total cost  Total cost  Total cost	_ □ Breakdown attached □ Breakdown attached			
3. A. Fo	Unanticipated or Unusually High O&M Costs During Review Period  Describe costs and reasons:  V. ACCESS AND INSTITUTIONAL CONTROLS  Applicable  N/A  Fencing					
1.	Fencing damaged ☐ Location shown on site map ☐ Gates secured ☐ N/A  Remarks					
B. Other Access Restrictions						
1.	Signs and other security measures					

1.	Implementation and enforcement		
	Site conditions imply ICs not properly implemented	☐ Yes ☐ No	□ N/A
	Site conditions imply ICs not being fully enforced	□ Yes □•No	□ N/A
	Type of monitoring (e.g., self-reporting, drive by)		·
	Frequency		
	Responsible party/agency		
	Contact		
	Name Title	Date Phone	e no.
	Reporting is up-to-date	☑ Yes □ No	□ N/A
	Reports are verified by the lead agency	Yes No	
	reports are refined by the lead agency	_	
	Specific requirements in deed or decision documents have been met	☑Yes □ No	
	Violations have been reported	□ Yes 🗗 No	□ N/A
	Other problems or suggestions:   Report attached		
2.	Adequacy ☐ ICs are adequate ☐ ICs are inade	equate	□ N/A
2.	Adequacy ICs are adequate ICs are inade Remarks However need to conduct IC 31	equate	□ N/A
2.	Adequacy ICs are adequate ICs are inade Remarks However need to conduct IC 51 ICs could be more protective	equate	□ N/A
2.	Adequacy SICs are adequate DICs are inade Remarks However need to conduct IC 31 ICs could be more protective	equate widy to see	□ N/A
	Adequacy DICs are adequate DICs are inade  Remarks However need to conduct IC 31  IC could be more protective  General	equate	□ N/A
<b>D.</b> C	Remarks However need to conduct IC 31	redry to see	□ N/A
<b>D.</b> C	Remarks However need to conduct IC 31  ICS could be more protective  General	vandalism evident	- if
<b>D.</b> C	Remarks However pled to conduct IC 31  IC could be more protective  General  Vandalism/trespassing   Location shown on site map	vandalism evident	- if
<b>D.</b> G	Remarks However pled to conduct IC 31  IC could be more protective  General  Vandalism/trespassing   Location shown on site map	vandalism evident	- if
<b>D.</b> G	Remarks However pled to conduct IC 31  IC could be more protective  General  Vandalism/trespassing   Location shown on site map   No Remarks	vandalism evident	
<b>D.</b> G	Remarks However pled to conduct IC 31  IC could be more protective  General  Vandalism/trespassing   Location shown on site map   No Remarks    Land use changes on site   N/A   Remarks	vandalism evident	
<b>D. G</b> 1.	Remarks   However   need to conduct IC 31  IC could be more protective  General  Vandalism/trespassing   Location shown on site map   No Remarks  Land use changes on site   N/A   Remarks  Land use changes off site   N/A	vandalism evident	
<b>D. G</b> 1.	Remarks However pled to conduct IC 31  IC could be more protective  General  Vandalism/trespassing   Location shown on site map   No Remarks    Land use changes on site   N/A   Remarks	vandalism evident	
2. D. G. 1. 2. 3.	Remarks   Land use changes off site   N/A   Land use changes   Land use changes off site   N/A   Land use changes   Land	vandalism evident	
D. G. 1.	Remarks   Location shown on site map   No Remarks   Land use changes of site   N/A   Remarks   VI. GENERAL SITE CONDITIONS	vandalism evident	
D. G. 1. 2. 3.	Remarks   Land use changes off site   N/A   Land use changes   Land use changes off site   N/A   Land use changes   Land	vandalism evident	
D. C	Remarks	vandalism evident	

B. Otl	her Site Conditions		
	Remarks		
	VII. LANDI	FILL COVERS Applicable	] N/A
A. La	ndfill Surface		
1.	Settlement (Low spots) Areal extent Remarks	☐ Location shown on site map Depth	Settlement not evident
2.	Cracks Lengths Widths Remarks	☐ Location shown on site map  Depths	Cracking not evident
3.	Erosion Areal extent Remarks Frostor or 516	Location shown on site map Depth_1 fr pac of dameter	☐ Erosion not evident
4.	Holes Areal extent Remarks	☐ Location shown on site map Depth	Holes not evident
5.	Vegetative Cover Gras Gras Gras Gras Gras Gras Gras Gras	1 1 2	_
6.	Alternative Cover (armored roc Remarks	k, concrete, etc.) 🗆 N/A	
7.	Bulges Areal extent Remarks	☐ Location shown on site map Height	Bulges not evident
8.	Wet Areas/Water Damage  ☐ Wet areas  ☐ Ponding ☐ Seeps ☐ Soft subgrade Remarks	☐ Wet areas/water damage not ev☐ Location shown on site map☐ Location shown on site m	Areal extentAreal extent

				_		
9.	Slope Instability Areal extent Remarks		☐ Location shown on si	te map	☑ No evidence	of slope instability
		/				
В.	(Horizontally constru		☑ N/A s of earth placed across a so y of surface runoff and inte			
1.	Flows Bypass Bencl Remarks		☐ Location shown on si			I/A or okay
2.	Bench Breached Remarks		☐ Location shown on si		□•N/A or o	kay
3.	Bench Overtopped Remarks		☐ Location shown on si	<u> </u>		I/A or okay
C.	Channel lined with a slope of the cover an cover without creating	erosion contr d will allow	☐ N/A ol mats, riprap, grout bags the runoff water collected llies.)	, or gabions, or gabions, or gas	ons that descend enches to move o	down the steep side
1.	Settlement Areal extent Remarks		ation shown on site map Depth		evidence of sett	lement
2.			ation shown on site map Areal extent		evidence of deg	radation
3.	Erosion Areal extent Remarks		ation shown on site map Depth	□No	evidence of ero	sion
						<del></del>

4.	Undercutting
5.	Obstructions Type No obstructions  Location shown on site map Areal extent Size Remarks
6.	Excessive Vegetative Growth  No evidence of excessive growth  Vegetation in channels does not obstruct flow  Location shown on site map  Remarks
D. C	Cover Penetrations   Applicable   N/A
1.	Gas Vents ☐ Active ☐ Passive ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A Remarks
2.	Gas Monitoring Probes  ☐ Properly secured/locked☐ Functioning ☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A  Remarks
3.	Monitoring Wells (within surface area of landfill)  ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A  Remarks
4.	Leachate Extraction Wells  ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A  Remarks ☐ Routinely sampled ☐ Routine
5.	Settlement Monuments ☐ Located ☐ Routinely surveyed ☐ N/A Remarks_

E. Gas	S Collection and Treatmen	nt Applicable	□ N/A	
1.	Gas Treatment Facilitie ☐ Flaring ☐ Good condition Remarks	☐ Thermal destruction		ction for reuse
2.		Ianifolds and Piping  ☐ Needs Maintenance		
3.	☐ Good condition	es (e.g., gas monitoring of Needs Maintenance	☑N/A	omes or buildings)
F. Cov	ver Drainage Layer	Applicable	□ N/A	
1.	Outlet Pipes Inspected Remarks			□ N/A
2.	Outlet Rock Inspected Remarks	Functioning		□ N/A
G. Det	tention/Sedimentation Po	nds Applicable	□ N/A	
1.	Siltation Areal extent □ Siltation not evident Remarks			
2.	☐ Erosion not evident	extentD		
3.	Outlet Works Remarks	☐ Functioning ☐ N/A	`	
		Functioning \( \square\) N/A	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	

H. R	etaining Walls	Applicable	□ N/A	
1.	Deformations Horizontal displacement_ Rotational displacement_ Remarks_		•	Deformation not evident
2.	<b>Degradation</b> Remarks	□ Location sho		Degradation not evident
I. Per	rimeter Ditches/Off-Site Di	scharge	Applicable	□ N/A
1.	Siltation □ Loca Areal extent Remarks			not evident
2.	Vegetative Growth  ✓ Vegetation does not im  Areal extent  Remarks	npede flow Type_		□ N/A
3.	Erosion Areal extentRemarks		<u> </u>	☐ Erosion not evident
4.	Discharge Structure Remarks	Functioning		
	VIII. VER	RTICAL BARRI	ER WALLS	Applicable □ N/A
1.	Settlement Areal extent Remarks		<u> </u>	Settlement not evident
2.	Performance Monitorin  ☐ Performance not monitoring Frequency Head differential Remarks	tored	🗆 Evidenc	

.

C.	Treatment System ☐ Applicable ☐ N/A
1.	Treatment Train (Check components that apply)  ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation ☐ Air stripping ☐ Carbon adsorbers ☐ Filters
	☐ Additive (e.g., chelation agent, flocculent) ☐ Others ☐ Good condition ☐ Needs Maintenance ☐ Sampling ports properly marked and functional ☐ Sampling/maintenance log displayed and up to date ☐ Equipment properly identified ☐ Quantity of groundwater treated annually ☐ Quantity of surface water treated annually Remarks
2.	Electrical Enclosures and Panels (properly rated and functional)  □ N/A □ Good condition □ Needs Maintenance Remarks
3.	Tanks, Vaults, Storage Vessels  □ N/A □ Good condition □ Proper secondary containment □ Needs Maintenance Remarks
4.	Discharge Structure and Appurtenances  □ N/A □ Good condition □ Needs Maintenance Remarks
5.	Treatment Building(s)  □ N/A
6.	Monitoring Wells (pump and treatment remedy)  ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition ☐ All required wells located ☐ Needs Maintenance ☐ N/A  Remarks
D.	Monitoring Data
1.	Monitoring Data  ☑ Is routinely submitted on time  ☐ Is of acceptable quality
2.	Monitoring data suggests:  ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

ט. M	onitored Natural Attenuation
1.	Monitoring Wells (natural attenuation remedy)  □ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition □ All required wells located □ Needs Maintenance □ N/A  Remarks
	X. OTHER REMEDIES
	If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.
	XI. OVERALL OBSERVATIONS
Α.	Implementation of the Remedy
	Describe issues and observations relating to whether the remedy is effective and functioning as design Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).  Exosum problems on the slope of the dam
В.	Adequacy of O&M
<u></u>	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.
D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

IX. GROUNDWATER / SURFACE WATER REMEDIES Applicable NA
A. Groundwater Extraction Wells, Pumps. and Pipelines Applicable NA
1. Pumps. Wellhead Plumbing. and Electrical Good condition all required wells properly operating Needs Maintenance NA Remarks
2. Extraction System Pipelines. Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks:
3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks:
B. Surface Water Collection Structures, Pumps. and Pipelines Applicable NA
L Collection Structures, Pumps, and Electrical Good condition Needs Mamtenauce Remarks
2. Surface Water Collection System Pipelines, Valves, Valve Bo!es, and Other Appurtenances Good condition Needs Maintenance  Remarks
3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks



# ch gunman's Web accounts being checked

) buy , sell )ks

7a. (AP) ch killer rammus of the ed in the man for nfirmed

handle ing-Hui Cho bought two 10-round magazines for the Walther P22—one of two handguns used in the massacre of 32 people. The clips were bought March 22 from a gun shop in Idaho.

"It's apparent that he purchased the empty magazine clips," eBay spokesman Hani Durzy said. "They're similar to what could be purchased in any sporting goods store around the country."

On eBay and affiliated

sites, Cho also sold several books with violent themes, tickets to Hokies football games, and a graphics calculator that contained several games.

"The calculator was used for less than one semester then I dropped the class," he wrote.

Cho's eBay feeback rating from other users was superb — 98.5 percent. Only one person gave him a negative rating. The site says the person has had an

account since January 2004.

On the eBay-affiliated Web site half.com, several books were listed for sale under the screen name "blazers5505."

They include "Men, Women, and Chainsaws" by Carol J. Clover, a book that explores gender in the modern horror film; the publisher's note reads: "Do the pleasures of horror movies really begin and end in sadism?"

Others include "The Best H.P. Lovecraft: Bloodcurdling Tales of Horror and the Macabre," by H.P. Lovecraft; and "The Female of the Species: Tales of Mystery and Suspense" by Joyce Carol Oates - a book in which the publisher writes: "In these and other gripping disturbing and women are confronted by the evil around them and surprised by the evil they find within themselves."

# nooting suspect feared firing

— The ent murlohnson ceived a l feared e said

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Chief Phillips caliber vo days nail cithis job ing that ziewed. ail was ich bag potings, ibridge

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rnoon, verly's in his 're the get me id.
d with

Phillips for several minutes, Phillips shot him twice. He then returned and shot Beverly twice more.

Phillips duct-taped a woman to a chair, holding her for hours, police said. Officers enfered the room and freed her after hearing the gunshot that killed Phillips.

The woman hostage, identified by NASA as Fran Crenshaw, a contract worker with MRI Technologies, worked in the same general area.



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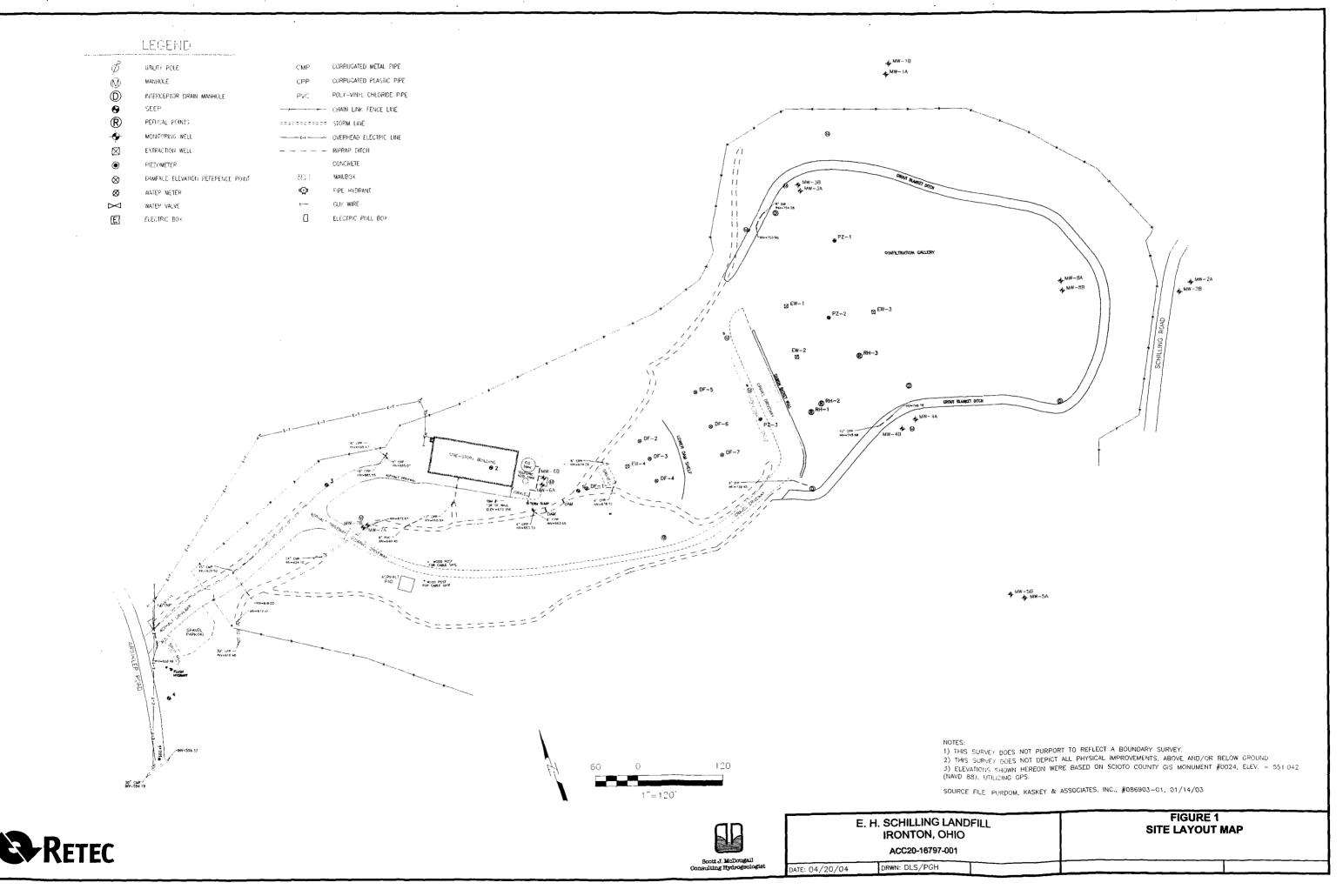
## EPA to Review E.H. Schilling Landill Superfund Site Hamilton Township, Ohio

U.S. Environmental Protection Agency has begun a five-year review of the E.H. Schilling Landfill site located off Patrick Street in Hamilton Township near Ironton. The federal Superfund law requires a review at least every five years at sites where the cleanup is complete or under way, but levels of hazardous waste remain that limit use of the property. The Agency conducts this review to make sure the cleanup still protects people and the environment. This is the third such review since construction work was largely completed in 1993.

Cleanup to address contamination on the site began in 1992. Crews dug up soil and contaminated mud from an unnamed stream bed and moved the materials to an existing landfill on the site. Seven million gallons of liquid waste (leachate) was pumped from the landfill and treated. A cap was placed on top to reduce seepage of rainwater and a wall was constructed into the ground to reduce the flow of ground water into the base of the landfill. Also, crews strengthened an existing dam by adding a berm. Long-term plans were put in place to periodically check the site, test the ground water and restrict the use of the land.

During the review, EPA will inspect the site and review monitoring results to ensure the remedy continues to protect people's health and the environment. EPA will then prepare a report of its findings and make a copy available for public review.

EPA invites you to provide information that you think might beimportant in this site review. Please contact Scott Hansen, Remedial Project Manager, EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604; (312) 886-1999 or (800) 621-8431 during regular business hours; e-mail: hansen.scott@epa.gov. The five-year review report will be completed by July 2007. Site-related documents are available for review at the Briggs Lawrence County Public Library, 321 S. 4th St., Ironton.





## E.H. Schilling Landfill Lawrence County, OH

OHD980509947





EH Schilling Landfill Boundary

0 300 600 Feet



RPM: Scott Hansen

Created by Sarah Backhouse U.S. EPA Region 5 on 9/26/06

Chemical	Sample ID Sample Date Sample Type Well Type Area CAS No.	MW-3A 5/31/2006 Investigation Monitoring Outside		MW-4B 5/1/2006 Investigation Monitoring Outside		5/3 Inve Mo	MW-5B 31/2006 estigation initoring outside	on	MW-6A 5/31/2006 Investigation Monitoring Outside	1	MW-68 5/31/2006 nvestigation Monitoring Outside		MW-7B 5/31/2006 Investigation Monitoring Outside
VOCs (mg/L)	CAS NO.	ļ	⊢		+					┝		╁	
Chloromethane	74-87-3	0 0002 J	ł	0.0002 J	ιÌ	n	0.0002	j	< 0.001		0 0002 J	l	0 0001 J
Bromomethane	74-83-9	< 0.001	<	0.0002	1		0 001	Ü	< 0.001	<	0 001	<	0 001
Vinyl Chloride	75-01-4	< 0.001	<	0 001	Ĺ		0.001		< 0.001	(	0.001	(	0.001
Chloroethane	75-00-3	< 0.001	<	0 001	- 1		0.001		0 012	`	0 0002 J	`	0.001
Methylene Chloride	75-09-2	0 0003 J	1	0 0002 J	ıί		0002	J	0 0006 J	1	0 0003 J	(	0 002
Acetone	67-64-1	0 0033 J	1	0.019	1		0056		0 0048 J		0 014	1	0 0021 J
Carbon disulfide	75-15-0	< 0.001		0 0001 J	П		0007	J	0 0002 J	1	0.001	<	0 001
1.1-Dichloroethene	75-35-4	< 0.001	<	0.001	j		0.001	_	< 0.001	<	0 001	<	0.001
1.1-Dichloroethane	75-34-3	< 0.001	`	0 0002 J	,		0.0004	J	< 0.001		0.0003 J	<	0.001
cis-1,2-Dichloroethene	156-59-2	< 0.001	<	0.001			0.001		< 0.001	<	0 001	<	0.001
trans-1,2-Dichloroethene	156-60-5	< 0.001	<	0.001	Ţ	< (	0 001		< 0.001	<	0.001	<	0 001
Chloroform	67-66-3	< 0.001	<	0.001	- [	< (	0.001		< 0.001	<	0.001	<	0 001
1,2-Dichloroethane	107-06-2	< 0.001	<	0 001	-	< (	0 001		0 0026	<	0 001	<	0 001
2-Butanone	78-93-3	< 0 005	}	0 0027 J	1	< (	0 005		< 0.005	<	0 005	<	0 005
1,1,1-Trichloroethane	71-55-6	< 0.001	<	0 001	1		0.001		< 0.001	<	0.001	<	0.001
Carbon tetrachloride	56-23-5	< 0.001	<	0 001	-		0.001		< 0.001	<	0 001	<	0 001
Bromodichtoromethane	75-27-4	< 0.001	<	0.001	1		0.001		< 0.001	<	0.001	<	0.001
1.2-Dichloropropane	78-87-5	< 0.001	<	0.001	-		0.001		< 0.001	<	0.001	<	0.001
cis-1,3-Dichloropropane	10061-01-5	< 0.001	<	0 001	1		0.001		< 0.001	<	0 001	<	0.001
Trichloroethene	79-01-6	< 0.001	<	0.001	- (		0.001		< 0.001	<	0.001	<	0.001
Dibromochloromethane	124-48-1	< 0.001	<	0.001			0 001 0.001		< 0.001 < 0.001	\	0.001 0.001	<	0.001
1,1,2-Trichloroethane	79-00-5 71-43-2	< 0.001 < 0.001	< <	0.001 0.001	1		0.001		< 0.001 < 0.001	<	0.001	< <	0.001 0.001
Benzene trans-1,3-Dichloropropene	10061-02-6	< 0.001 < 0.001	~	0.001	1		0.001		< 0.001	<	0.001	<	0.001
Bromoform	75-25-2	< 0.001	~	0.001	1		0.001		< 0.001	~	0.001	~	0.001
4-Methyl-2-pentanone	108-10-1	< 0.005	ì	0.0012 J	- 1		0.005		< 0.005	~	0.005	~	0.005
2-Hexanone	591-78-6	< 0.005	<	0.005	- 1		0.005		< 0.005	<	0 005	~	0.005
Tetrachloroethene	127-18-4	< 0.001	,	0.001	1		0.001		< 0.001	<	0 001		0.001
1,1,2,2-Tetrachloroethane	79-34-5	< 0.001	<	0.001	ŀ		0.001		< 0.001	<	0.001	<	0.001
Toluene	108-88-3	< 0.001	<	0.001	1	0	.0001	J	< 0.001	<	0.001	<	0.001
Chlorobenzene	108-90-7	< 0.001	<	0.001		< 0	0.001		< 0.001	<	0.001	<	0.001
Ethylbenzene	100-41-4	< 0.001	<	0.001	1		0.001		< 0.001	<	0.001	<	0.001
Styrene	100-42-5	< 0.001	<	0.001	١		001		< 0.001	<	0 001	<	0.001
Xylene (total)	1330-20-7	< 0.001	٧	0.001	4	0.	.0003	J	< 0.001	<	0.001	<	0.001
SVOCs (mg/L)	400 4- 0			0.000	1				0.000		0.000	ł	
4-Chloroaniline	106-47-8	< 0.002 < 0.002	<	0.003 0.003	- 1		0.002 0.002		< 0.003 < 0.003	<	0.003 0.003	<	0.002 0.002
2-Methylnaphthalene 2-Nitroaniline	91-57-6 88-74-4	< 0.002 < 0.002	٧	0.003	- 1		0.002		< 0.003 < 0.003	۲	0.003	<	0.002
2,4,5-Trichlorophenol	95-95-4	< 0.002	<	0.003			0.002		< 0.003	<	0.003	< <	0.002
2-Chlorophenol	95-57-8	< 0.002	~	0.003			0.002		< 0.003	~	0.003	,	0.002
Phenol	108-95-2	< 0.002		0.001 J	- 1		0.002	υĺ	0.005	<	0.003	<	0.002
2-Nitrophenol	88-75-5	< 0.002	<	0.003	- 1		0.002	Ĭ	< 0.003	<	0.003	~	0.002
2,4-Dimethylphenol	105-67-9	< 0.002	<	0.005	- [		0.005	- 1	< 0.005	<	0.005	<	0.005
2,4-Dichlorophenol	120-83-2	< 0.002	<	0.003		< 0	0.002		< 0.003	<	0.003	<	0.002
4-Chloro-3-methylphenol	59-50-7	< 0.002	<	0.003	1	< 0	0.002	- 1	< 0.003	<	0.003	<	0.002
2,4,6-Trichlorophenol	88-06-2	< 0.002	<	0.003	1		0.002	Į	< 0.003	<	0.003	<	0.002
bis(2-Chloroethyl)ether	111-44-4	< 0.002	<	0.003	- 1		0.002	-	< 0.003	<	0.003	<	0.002
1,3-Dichlorobenzene	541-73-1	< 0.002	<	0.003	- 1		0.002		< 0.003	<	0.003	<	0.002
1,4-Dichlorobenzene	106-46-7	< 0.002	<	0.003			0.002		< 0.003	<	0.003	<	0.002
1,2-Dichlorobenzene Hexachloroethane	95-50-1 67-72-1	< 0.002 < 0.002	<	0.003 0.003	- 7		0.002 0.002	- {	< 0.003 < 0.003	<	0.003	<	0.002
N-nitroso-di-n-propylamine	621-64-7	< 0.002 < 0.002	<	0.003			0.002		< 0.003	< <	0.003 0.003	<	0.002 0.002
Nitrobenzene	98-95-3	< 0.002	~	0.003	,		0.002	ł	< 0.003	<	0.003	~	0.002
Isophorone	78-59-1	< 0.002	~	0.003	ı		0.002		< 0.003	<	0.003	~	0.002
bis(2-Chloroethyl)methane	111-91-1	< 0.002	<	0.003	,		.002	Ì	< 0.003	<	0.003	<	0.002
1,2,4-Trichlorobenzene	120-82-1	< 0.002	<	0.003	J		.002	ł	< 0.003	<	0.003	<	0.002
Naphthalene	91-20-3	< 0.002	<	0.003	1		.002	1	< 0.003	<	0.003	<	0.002
Hexachlorobutadiene	87-68-3	< 0.002	<	0.003	1	< 0	.002	ŀ	< 0.003	<	0.003	<	0.002
Hexachlorocyclopentadiene	77-47-4	< 0.007	<	0.008	1		.007	ĺ	< 0.008	<	0.008	<	0 007
2-Chloronapthalene	91-58-7	< 0.002	<	0.003	,		.002	ļ	< 0.003	<	0.003	<	0 002
Acenaphthylene	208-96-8	< 0.002	<	0.003			.002	[	< 0.003	<	0.003	<	0.002
Dimethylphthalate	131-11-3	< 0.002	<	0.003	,		.002		< 0.003	<	0.003	<	0.002
2-Methylphenol	95-48-7	< 0.002	<	0.003	Ŀ	<0.	.002		< 0.003	<	0.003	<	0.002

## 2006 Semi-Annual Groundwater Data Summary E.H. Schilling Landfill - Ironton, OH

	Sample ID Sample Date Sample Type Well Type Area	MW-3A 5/31/2006 Investigation Monitoring Outside	MW-4B 5/1/2006 Investigation Monitoring Outside	MW-5B 5/31/2006 Investigation Monitoring Outside	MW-6A 5/31/2006 Investigation Monitoring Outside	MW-6B 5/31/2006 Investigation Monitoring Outside	MW-7B 5/31/2006 Investigation Monitoring Outside
Chemical	CAS No.	Outside	Outside	Outside	Outside	Outside	Outside
2,2'-oxybis(1-Chloropropanne)	108-60-1	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
4-Methylphenol	106-44-5	< 0 002	< 0.003	< 0.002	0 001 J	< 0.003	< 0 002
Dibenzofuran	132-64-9	< 0.002	< 0.003	< 0.002	< 0.003	< 0 003	< 0.002
3-Nitroaniline	99-09-2	< 0 002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
4-Nitroaniline	100-01-6	< 0 002	< 0.003	< 0.002	< 0.003	< 0.003	< 0 002
2,4-Dinitrophenol	51-28-5	< 0.029	< 0.03	< 0.029	< 0.031	< 0.031	< 0.029
4-Nitrophenol	100-02-7	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
2-Methyl-4,6-Dinitrophenol	534-52-1	< 0.007	< 0 008	< 0.007	< 0.008	< 0.008	< 0.007
Pentachlorophenol	87-86-5	< 0 007	< 0.008	< 0.007	< 0.008	< 0.008	< 0.007
2,6-Dinitrotoluene	606-20-2	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Acenphthene	83-32-9	< 0 002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
2,4-Dinitotoluene	121-14-2	< 0 002	< 0.003	< 0 002	< 0.003	< 0.003	< 0.002
Fluorene	86-73-7	< 0 002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
4-Chlorophenyl-phenylether	7005-72-3	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Diethyl phthalate	84-66-2	< 0 002	< 0 003	< 0.002	< 0.003	< 0.003	< 0.002
N-Nitrosodiphenylamine	86-30-6	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
4-Bromophenyl-phenylether	101-55-3	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Hexachlorobenzene	118-74-1	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Phenanthrene	85-01-8	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Anthracene	120-12-7	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Di-n-butyl phthalate	84-74-2	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Fluoranthene	206-44-0	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Pyrene	129-00-0	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Butyl benzyl phthalate	85-68-7	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Benzo(a)anthracene	56-55-3	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Chrysene	218-01-9	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
3,3-Dichlorobenzidine	91-94-1	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Di-n-octyl phthalate	117-84-0	< 0.002 < 0.002	< 0.003 < 0.003	< 0.002 < 0.002	< 0.003 < 0.003	< 0.003 < 0.003	< 0.002 < 0.002
Benzo(b)fluoranthene Benzo(k)fluoranthene	205-99-2 207-08-9	< 0.002 < 0.002	< 0.003 < 0.003	< 0.002 < 0.002	< 0.003 < 0.003		< 0.002 < 0.002
Benzo(a)pyrene	50-32-8	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003 < 0.003	< 0.002
Indeno(1,2,3-cd)pyrene	193-39-5	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Dibenz(a,h)anthracene	53-70-3	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Benzo(g,h,i)perylene	191-24-2	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Carbazole	86-74-8	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.002
Metals (mg/L)							
Antimony	7440-36-0	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	7440-38-2	< 0.02	< 0.02	< 0.02	0.0161 J	< 0.02	< 0.02
Beryllium	7440-41-7	< 0.005	< 0.005	< 0.005	0.00097 J	< 0.005	< 0.005
Cadmium	7440-43-9	< 0.005	< 0.005	< 0.025	< 0.005	< 0.005	< 0.005
Chromium	7440-47-3	0 155	0.0322	0.118	0.283	0.301	0.0302
Copper	7440-50-8	1.35	0.108	1.87	0.056	0.126	< 0.01
Lead	7439-92-1	0 963	0.0137 J	0.405	0.0244	0.185	< 0.02
Mercury	7439-97-6	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	7440-02-0	0.197	0.0518	0.875	0.708	0.264	< 0.01
Silver	7440-22-4	< 0.005	< 0.005	0.0024 J	< 0.005	< 0.005	< 0.005
Zinc	7440-66-6	0.362	0.0211	2.76	0.448	0.0751	< 0.02
Calcium	7440-70-2	NA	NA	NA	NA	NA	NA
Iron	7439-89-6	NA I	NA NA	NA NA	NA	NA NA	NA NA
Magnesium	7439-95-4	NA I	NA I	NA I	NA I	NA NA	NA NA
Potassium Sodium	7440-09-7	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Alkalinity to pH 8.3	7440-23-5	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Alkalinity to pH 4.5		NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Total Dissolved Solids		NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Nitrite Nitrogen	14797-65-0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Nitrate Nitrogen	14797-55-8	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Ammonia Nitrogen	7664-41-7	NA NA	NA NA	NA NA	NA NA	NA I	NA NA
Chloride	16887-00-6	NA I	NA NA	NA NA	NA NA	NA	NA
Sulfate	14808-79-8	NA NA	NA	NA NA	NA	NA	NA
Bicarbonate	71-52-3	NA NA	NA	NA NA	NA NA	NA NA	NA NA
Carbonate	20227-92-3	NA NA	NA NA	NA NA	NA NA	NA.	NA

Notes

J - Estimated Value

	Sample ID Sample Date Sample Type Well Type Area	EW-1 5/30/2006 Investigation Extraction Inside	EW-2 5/30/2006 Investigation Extraction Inside	EW-3 5/30/2006 Investigation Extraction Inside	EW-4 5/30/2006 Investigation Extraction Inside	MW-3A 11/22/2006 Investigation Monitoring Outside	MW-4B 11/22/2006 Investigation Monitoring Outside
Chemical	CAS No.	ļ <u></u>	ļ <u> </u>			<del>                                     </del>	
VOCs (mg/L) Chloromethane	74-87-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	0.0001 J
Bromomethane	74-83-9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.0001
Vinyl Chloride	75-01-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Chloroethane	75-00-3	0.039	0.022	0 039	0 047	< 0.001	0.0001 J
Methylene Chloride	75-09-2	0 003 J	0.005 J	0 007	< 0.005	< 0.002	< 0.002
Acetone	67-64-1	< 0.02	0.015 J	0 033	< 0.02	< 0.005	0.0039 J
Carbon disulfide	75-15-0	< 0.005	< 0.005	0.011	< 0.005	< 0.001	< 0.001
1,1-Dichloroethene	75-35-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
1,1-Dichloroethane	75-34-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
cis-1,2-Dichloroethene	156-59-2	< 0.005	0.001 J	< 0.005	< 0.005	< 0.001	< 0.001
trans-1,2-Dichloroethene	156-60-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Chloroform	67-66-3	< 0.005	< 0 005	< 0.005	< 0.005	< 0.001	< 0.001
1,2-Dichloroethane	107-06-2	0 012	0 015	0.018	0 005 J	< 0.001	< 0.001
2-Butanone	78-93-3	< 0.01	< 0.01	0 01 J	< 0.01	< 0.005	< 0.005
1,1,1-Trichloroethane	71-55-6	< 0.005	< 0.005	< 0 005	< 0.005	< 0.001	< 0.001
Carbon tetrachloride	56-23-5	< 0 005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Bromodichloromethane	75-27-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
1,2-Dichloropropane	78-87-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
cis-1,3-Dichloropropane	10061-01-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Trichloroethene	79-01-6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Dibromochloromethane	124-48-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
1,1,2-Trichloroethane	79-00-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Benzene	71-43-2	0.0007 J	0.004 J	0.007	< 0.005	< 0.001	< 0.001
trans-1,3-Dichloropropene	10061-02-6	< 0.005 < 0.005	< 0.005 < 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Bromoform	75-25-2			< 0.005	< 0.005	< 0.001	< 0.001
4-Methyl-2-pentanone 2-Hexanone	108-10-1 591-78-6	< 0.01 < 0.01	< 0.01 < 0.01	< 0.01 < 0.01	< 0.01 < 0.01	< 0.005 < 0.005	< 0.005 < 0.005
Tetrachloroethene	127-18-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.005 < 0.001
1,1,2,2-Tetrachloroethane	79-34-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Toluene	108-88-3	< 0.005	0.003 J	0.006	< 0.005	< 0.001	< 0.001
Chlorobenzene	108-90-7	< 0.005	0.001 J	< 0.005	< 0.005	< 0.001	< 0.001
Ethylbenzene	100-41-4	< 0.005	0.26	1.9	< 0.005	< 0.001	< 0.001
Styrene	100-42-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.001
Xylene (total)	1330-20-7	< 0.005	0.001 J	0.008	< 0.005	< 0.001	< 0.001
SVOCs (mg/L)							
4-Chloroaniline	106-47-8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2-Methylnaphthalene	91-57-6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2-Nitroaniline	88-74-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	( 0 003
2,4,5-Trichlorophenol	95-95-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2-Chlorophenol	95-57-8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Phenol	108-95-2	0.014	0.041	0.14	0.028	0.0007 J	0.0009 J
2-Nitrophenol	88-75-5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2,4-Dimethylphenol	105-67-9	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.005
2,4-Dichlorophenol	120-83-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
4-Chloro-3-methylphenol	59-50-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2,4,6-Trichlorophenol	88-06-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
bis(2-Chloroethyl)ether	111-44-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
1,3-Dichlorobenzene 1,4-Dichlorobenzene	541-73-1 106-46-7	< 0.005 < 0.005	< 0.005 < 0.005	< 0.005 . < 0.005	< 0.005 < 0.005	< 0.003 < 0.003	< 0.003
1,2-Dichlorobenzene	95-50-1	< 0.005 < 0.005	< 0.005 < 0.005	< 0.005 < 0.005	< 0.005 < 0.005	< 0.003	< 0.003 < 0.003
Hexachloroethane	67-72-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
N-nitroso-di-n-propylamine	621-64-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Nitrobenzene	98-95-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Isophorone	78-59-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
bis(2-Chloroethyl)methane	111-91-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
1,2,4-Trichlorobenzene	120-82-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Naphthalene	91-20-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Hexachiorobutadiene	87-68-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Hexachlorocyclopentadiene	77-47-4	< 0.014	< 0.014	< 0.014	< 0.015	< 0.008	< 0.008
2-Chloronapthalene	91-58-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Acenaphthylene	208-96-8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Dimethylphthalate	131-11-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2-Methylphenol	95-48-7	< 0.005	< 0.005	0.002 J	< 0.005	< 0.003	<0.003

### 2006 Semi-Annual Groundwater Data Summary E.H. Schilling Landfill - Ironton, OH

	Sample ID	EW-1	EW-2	EW-3	EW-4	MW-3A 11/22/2006	MW-4B 11/22/2006
}	Sample Date Sample Type	5/30/2006 Investigation	5/30/2006 Investigation	5/30/2006 Investigation	5/30/2006 Investigation	Investigation	Investigation
			_	Extraction	Extraction	Monitoring	Monitoring
	Well Type Area	Extraction Inside	Extraction Inside	Inside	Inside	Outside	Outside
Chemical	CAS No.	mside	inside	mside	mside	Outside	Outside
2,2'-oxybis(1-Chloropropanne)	108-60-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
4-Methylphenol	106-44-5	< 0.005	< 0.005	0 02	< 0.005	< 0.003	< 0.003
Dibenzofuran	132-64-9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
3-Nitroaniline	99-09-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
4-Nitroaniline	100-01-6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2,4-Dinitrophenol	51-28-5	< 0.058	< 0.058	< 0.058	< 0.059	< 0.03	< 0.03
4-Nitrophenol	100-02-7	< 0.029	< 0.029	< 0.029	< 0.029	< 0.015	< 0.015
2-Methyl-4,6-Dinitrophenol	534-52-1	< 0.014	< 0.014	0.014	< 0.015	< 0.008	< 0.008
Pentachlorophenol	87-86-5	< 0.014	< 0.014	< 0.014	< 0.015	< 0.008	< 0.008
2,6-Dinitrotoluene	606-20-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Acenphthene	83-32-9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
2,4-Dinitotoluene	121-14-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Fluorene	86-73-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
4-Chlorophenyl-phenylether	7005-72-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Diethyl phthalate	84-66-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
N-Nitrosodiphenylamine	86-30-6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
4-Bromophenyl-phenylether	101-55-3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Hexachlorobenzene	118-74-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Phenanthrene	85-01-8	< 0.005	< 0.005	0 002 J	< 0.005	< 0.003	< 0.003
Anthracene	120-12-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Di-n-butyl phthalate	84-74-2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Fluoranthene	206-44-0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Pyrene	129-00-0	< 0.005	< 0.005	0.008	< 0.005	< 0.003	< 0.003
Butyl benzyl phthalate	85-68-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Benzo(a)anthracene	56-55-3	< 0.005	< 0.005	0.007	< 0.005	< 0.003	< 0.003
Chrysene	218-01-9	< 0.005	< 0.005	0 011	< 0.005	< 0.003	< 0.003
3,3'-Dichlorobenzidine	91-94-1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Di-n-octyl phthalate	117-84-0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Benzo(b)fluoranthene	205-99-2	< 0.005	< 0.005	0.002 J	< 0.005	< 0.003	< 0.003
Benzo(k)fluoranthene	207-08-9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Benzo(a)pyrene	50-32-8	< 0.005	< 0.005	0.008	< 0.005	< 0.003	< 0.003
Indeno(1,2,3-cd)pyrene	193-39-5	< 0.005	< 0.005	0.001 J	< 0.005	< 0.003	< 0.003
Dibenz(a,h)anthracene	53-70-3	< 0.005	< 0.005	0 002 J	< 0.005	< 0.003	< 0.003
Benzo(g,h,i)perylene	191-24-2	< 0.005	< 0.005	0.004 J	< 0.005	< 0.003	< 0.003
Carbazole	86-74-8	0.001 J	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003
Metals (mg/L)			-				
Antimony	7440-36-0	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	7440-38-2	< 0.02	0 0557	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	7440-41-7	< 0.005	0.0194	< 0.005	< 0.005	< 0.005	< 0.005
Cadmium	7440-43-9	< 0.005	< 0.025	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	7440-47-3	< 0.015	0.17	0.004 J	0.0025 J	0.195	0.0288
Copper	7440-50-8	0.374	3.7	0.11	0.0706	1.31	0.0516
Lead	7439-92-1	0.0328	1.06	0.0108 J	0.0383	0.732	0.0113 J
Mercury	7439-97-6	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	7440-02-0	0.37	3.86	0.0527	0.0377	0.541	0.172
Silver	7440-22-4	< 0.005	0.0088	< 0.005	< 0.005	0.0024 J	< 0.005
Zinc	7440-66-6	0.224	2.45	0.0457	0.0104 J	0.454	0.104
Calcium	7440-70-2	NA	NA	NA	NA	NA	NA NA
tron	7439-89-6	NA	NA	NA	NA	NA	NA
Magnesium	7439-95-4	NA	NA	NA	NA	NA	NA NA
Potassium	7440-09-7	NA	NA	NA 	NA 	NA NA	NA 
Sodium	7440-23-5	NA	NA .	NA	NA	NA NA	NA
Alkalinity to pH 8.3		NA	NA	NA 	NA 	NA NA	NA NA
Alkalinity to pH 4.5	• • • •	NA I	NA I	NA	NA	NA	NA NA
Total Dissolved Solids	44707.05.0	NA	NA	NA NA	NA NA	NA NA	NA
Nitrite Nitrogen	14797-65-0	NA I	NA	NA	NA	NA NA	NA NA
Nitrate Nitrogen	14797-55-8	NA	NA	NA NA	NA NA	NA NA	NA NA
Ammonia Nitrogen	7664-41-7	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Chloride Sulfato	16887-00-6	NA I	NA I	NA I	NA I	NA NA	NA NA
Sulfate	14808-79-8	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Bicarbonate	71-52-3	NA I	NA I	NA NA	NA NA	NA NA	NA NA
Carbonate	20227-92-3	NA I	NA I	NA I	NA Ì	NA	l NA

Notes:

J - Estimated Value

Chamian	Sample ID Sample Date Sample Type Well Type Area CAS No.	MW-5B 11/22/2006 Investigation Monitoring Outside		MW-6A 11/22/2006 Investigation Monitoring Outside		MW-6B 11/22/2006 Investigation Monitoring Outside	MW-7B 11/22/2006 Investigation Monitoring Outside	In	EW-1 11/21/2006 exestigation Extraction Inside	lr	EW-2 11/21/2006 evestigation Extraction Inside
VOCs (mg/L)	CAS No.		╄		├-			├		├	
Chloromethane	74-87-3	0 0006 J	Ι.	0 001	١.	0 001	< 0.001		0.005	١.	0.005
Bromomethane	74-83-9	1	1		\	0 001	ì	< <	0.005	<	0.005
1			<		<	0 001	1 .		0.005	<	0.005
Vinyl Chloride	75-01-4 75-00-3	< 0.001 0.0003 J	<	0.001	\ <			<	0 005	<	0 005
Chloroethane Methylene Chloride	75-09-2	< 0.003 J		0.0093 0.0003 J	<	0 0001 J 0 002	< 0.001 < 0.002		0 005	<	0 005
Acetone	67-64-1	0.0028 J	-	0 0003 J	\ `	0 0042 J	0 0026 J	<	0 006 J	`	0.012
Carbon disulfide	75-15-0	0.0020 J		0 0000 J		0 0002 J	< 0.001	<	0 005	<	0.012
1,1-Dichloroethene	75-35-4	< 0.001	1 <		<		< 0.001	<	0.005	<	0.005
1,1-Dichloroethane	75-34-3	0.0005 J		0.0021	1	0 0002 J	< 0.001	<	0.005	<	0.005
cis-1.2-Dichloroethene	156-59-2	< 0.001	1 <		<		< 0.001	<	0 005	<b>!</b>	0 001
trans-1,2-Dichloroethene	156-60-5	< 0.001	<		<	0 001	< 0.001	<	0.005	<	0.005
Chloroform	67-66-3	< 0.001	1 <		<	0 001	< 0.001	<	0.005	<	0.005
1,2-Dichloroethane	107-06-2	< 0.001	<	0.001	<	0 001	< 0.001	İ	0.006		0.01
2-Butanone	78-93-3	< 0.005	<	0 005	<	0 005	< 0.005	<	0 01	{	0 004 .
1,1,1-Trichloroethane	71-55-6	< 0.001	<	0.001	<	0 001	< 0.001	<	0 005	<	0.005
Carbon tetrachloride	56-23-5	< 0.001	<	0.001	<	0 001	< 0.001	<	0 005	<	0 005
Bromodichloromethane	75-27-4	< 0.001	<	0.001	<	0.001	< 0.001	<	0.005	<	0.005
1,2-Dichloropropane	78-87-5	< 0.001	<	-	<	0 001	< 0.001	<	0.005	<	0.005
cis-1,3-Dichloropropane	10061-01-5	< 0.001	<		<	0 001	< 0.001	<	0.005	<	0.005
Trichloroethene	79-01-6	< 0.001	<		<	0.001	< 0.001	<	0.005	<	0.005
Dibromochloromethane	124-48-1	< 0.001	<		<		< 0.001	<b> </b> <	0.005	<	0.005
1,1,2-Trichloroethane	79-00-5	< 0.001	<		<b> </b> <	0.001	< 0.001	<	0.005	<	0 005
Benzene	71-43-2	0.0002 J			<		< 0.001	<	0.005	l	0.003
trans-1,3-Dichloropropene	10061-02-6	< 0.001	\ \		<		< 0.001	<	0.005	<	0.005
Bromotorm	75-25-2 108-10-1	< 0.001 < 0.005	(		\ \ \		< 0.001 < 0.005	\ \ \	0.005 0.01	\ < <	0.005 0.01
4-Methyl-2-pentanone 2-Hexanone	591-78-6	< 0.005	\		< <		< 0.005	< <	0.01	{	0.01
Tetrachloroethene	127-18-4	< 0.001			<		< 0.001	~	0.005	~	0.005
1,1,2,2-Tetrachloroethane	79-34-5	< 0.001			<		< 0.001	<	0.005	~	0.005
Toluene	108-88-3	0.0003 J	1	-	~		< 0.001	<	0.005	<	0.005
Chlorobenzene	108-90-7	< 0.001	<		\		< 0.001	<	0.005	l	0.001
Ethylbenzene	100-41-4	< 0.001	<	0.001	<	0.001	< 0.001	ļ	0.001 J		0.034
Styrene	100-42-5	< 0.001	<	0.001	<	0 001	< 0.001	<	0.005	<	0.005
Xylene (total)	1330-20-7	0.0004 J	<	0.001	<	0.001	< 0.001	<	0.005	<	0.005
SVOCs (mg/L)			1		l						
4-Chloroaniline	106-47-8	< 0.003	<		<		< 0.003	<	0.005	<	0.005
2-Methylnaphthalene	91-57-6	< 0.003	<		<		< 0.003	<	0.005	<	0.005
2-Nitroanitine	88-74-4	< 0.003	<		<		< 0.003	<	0.005	<	0.005
2,4,5-Trichlorophenol	95-95-4	< 0.003	<		<		< 0.003	<	0.005	<	0.005
2-Chlorophenol Phenol	95-57-8 108-95-2	< 0.003 0.005	^	0.003 0.001 J	<		< 0.003 < 0.003	<	0.005 0.001 J	<	0.005 0.036
2-Nitrophenol	88-75-5	< 0.003	<		\		< 0.003	<	0.005	<	0.005
2,4-Dimethylphenol	105-67-9	< 0.005					< 0.005	~	0.003	~	0.003
2,4-Dichlorophenol	120-83-2	< 0.003	1		`		< 0.003	<	0.005	~	0.005
4-Chloro-3-methylphenol	59-50-7	< 0.003	<		<		< 0.003	<	0.005	<	0.005
2,4,6-Trichlorophenol	88-06-2	< 0.003	<		<		< 0.003	<	0.005	<	0.005
bis(2-Chloroethyl)ether	111-44-4	< 0.003	<		<	0.003	< 0.003	<	0.005	i	0.002
1,3-Dichlorobenzene	541-73-1	< 0.003	<		<	0.003	< 0.003	<	0.005	<	0.005
1,4-Dichlorobenzene	106-46-7	< 0.003	<		<		< 0.003	<	0.005	<	0.005
1,2-Dichlorobenzene	95-50-1	< 0.003	<		<		< 0.003	<	0.005	<	0.005
Hexachloroethane	67-72-1	< 0.003	<		<		< 0.003	<	0.005	<	0.005
N-nitroso-di-n-propylamine	621-64-7	< 0.003	( )		\		< 0.003	\ \ .	0.005	<	0.005
Nitrobenzene	98-95-3	< 0.003	\		\ <		< 0.003	<	0.005	\ \ .	0.005
Isophorone bis(2-Chloroethyt)methane	78-59-1 111-91-1	< 0.003 < 0.003	{		\		< 0.003 < 0.003	< <	0.005 0.005	< <	0.005 0.005
1,2,4-Trichlorobenzene	120-82-1	< 0.003			\		< 0.003	<	0.005	{	0.005
Naphthalene	91-20-3	< 0.003			[ `		< 0.003	~	0.005	`	0.005
Hexachlorobutadiene	87-68-3	< 0.003			`		< 0.003		0.005	<	0.005
Hexachlorocyclopentadiene	77-47-4	< 0.008			<		< 0.008	~	0.014	<	0.015
2-Chloronapthalene	91-58-7	< 0.003	/ <		<		< 0.003	<	0.005	<	0.005
Acenaphthylene	208-96-8	< 0.003	<		<		< 0.003	<	0.005	<	0.005
Dimethylphthalate	131-11-3	< 0.003	<	0.003	<	0.003	< 0.003	<	0.005	<	0.005
2-Methylphenol	95-48-7	< 0.003	<	0.003	<	0.003	< 0.003	<	0.005	<	0.005

	Sample ID Sample Date	MW-5B 11/22/2006	MW-6A 11/22/2006	MW-6B 11/22/2006	MW-7B 11/22/2006	EW-1 11/21/2006	EW-2 11/21/2006
	Sample Type	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation
	Well Type	Monitoring	Monitoring	Monitoring	Monitoring	Extraction	Extraction
	Area	Outside	Outside	Outside	Outside	Inside	Inside
Chemical	CAS No.						
2,2'-oxybis(1-Chloropropanne)	108-60-1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0 005
4-Methylphenol	106-44-5	< 0.003	0 001 J	< 0.003	< 0.003	< 0.005	< 0.005
Dibenzofuran	132-64-9	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
3-Nitroaniline	99-09-2	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
4-Nitroaniline	100-01-6	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
2,4-Dintrophenol	51-28-5	< 0.03	< 0.03	< 0.03	< 0.03	< 0.058	< 0.059
4-Nitrophenol	100-02-7	< 0.015	< 0.015	< 0.015	< 0.015	< 0.029	< 0.029
2-Methyl-4,6-Dinitrophenol	534-52-1	< 0.008 < 0.008	< 0.008	< 0.008	< 0 008 < 0 008	< 0.014	< 0.015
Pentachlorophenol 2,6-Dinitrotoluene	87-86-5 606-20-2	< 0.008 0.005	< 0 008 < 0 003	< 0.008 < 0.003		< 0.014 < 0.005	< 0.015 < 0.005
Acenphthene	83-32-9	< 0.003	< 0.003	< 0.003	< 0.003 < 0.003	< 0.005	< 0.005 < 0.005
2,4-Dinitotoluene	121-14-2	0.001 J	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Fluorene	86-73-7	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
4-Chlorophenyl-phenylether	7005-72-3	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Diethyl phthalate	84-66-2	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
N-Nitrosodiphenylamine	86-30-6	0 001 J	< 0.003	< 0.003	< 0.003	< 0.005	·< 0 005
4-Bromophenyl-phenylether	101-55-3	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Hexachlorobenzene	118-74-1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Phenanthrene	85-01-8	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Anthracene	120-12-7	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Di-n-butyl phthalate	84-74-2	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Fluoranthene	206-44-0	< 0.003	< 0.003	< 0.003	< 0 003	< 0.005	< 0.005
Pyrene	129-00-0	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Butyl benzyl phthalate	85-68-7	< 0.003	< 0 003	< 0 003	< 0.003	< 0.005	< 0.005
Benzo(a)anthracene	56-55-3	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Chrysene	218-01-9	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
3,3'-Dichlorobenzidine	91-94-1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Di-n-octyl phthalate	117-84-0	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Benzo(b)fluoranthene	205-99-2	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Benzo(k)fluoranthene	207-08-9 50-32-8	< 0.003 < 0.003	< 0.003 < 0.003	< 0.003 < 0.003	< 0.003 < 0.003	< 0.005 < 0.005	< 0.005 < 0.005
Benzo(a)pyrene Indeno(1,2,3-cd)pyrene	193-39-5	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005 < 0.005
Dibenz(a,h)anthracene	53-70-3	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Benzo(g,h,i)perylene	191-24-2	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Carbazole	86-74-8	< 0.003	< 0.003	< 0.003	< 0.003	0.003 0.001 J	0.003 0.001 J
Metals (mg/L)	00 14 0	0.000	0.000	- 0.000	· 0.000	0.001	0.001
Antimony	7440-36-0	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	7440-38-2	< 0.02	0 0147 J	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	7440-41-7	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.0017 J
Cadmium	7440-43-9	< 0.025	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	7440-47-3	0.011 J	0 17	0.175	0.0805	0.0037 J	< 0.015
Copper	7440-50-8	0.418	0.0486	0.0488	0.0126	0.03	0.0704
Lead	7439-92-1	0.285	0.027	0.0505	< 0.015	< 0.015	0.0163
Mercury	7439-97-6	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	7440-02-0	0.078	0.7	0.138	0.0272	0.0688	0.103
Silver	7440-22-4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	7440-66-6	6.54	0.247	0.0318	0.0446	0.0659	0.0612
Calcium	7440-70-2	NA 	NA	NA	NA	NA	NA
Iron	7439-89-6	NA a	NA NA	NA	NA ***	NA	NA
Magnesium	7439-95-4	NA NA	NA NA	NA NA	NA NA	NA	NA NA
Potassium	7440-09-7	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Sodium	7440-23-5	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Alkalinity to pH 8.3		NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Alkalinity to pH 4.5 Total Dissolved Solids		NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Nitrite Nitrogen	14797-65-0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Nitrate Nitrogen	14797-55-8	NA I	NA NA	NA NA	NA NA	NA NA	NA NA
Ammonia Nitrogen	7664-41-7	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Chloride	16887-00-6	NA I	NA NA	NA NA	NA NA	NA NA	NA NA
Sulfate	14808-79-8	NA.	NA NA	NA	NA	NA NA	NA
Bicarbonate	71-52-3	NA	NA	NA	NA	NA	NA
Carbonate	20227-92-3	NA	NA	NA	NA	NA	NA

Notes

J - Estimated Value

Chemical	Sample ID Sample Date Sample Type Well Type Area CAS No.		EW-3 11/21/200 rvestigati Extraction Inside	on	ir	EW-4 11/21/2000 rvestigation Extraction Inside	on
VOCs (mg/L)	CAS NO.	<del>                                     </del>			┯		
Chloromethane	74-87-3	<	0.025		<	0.005	
Bromomethane	74-83-9	<	0 025		<	0 005	
Vinyl Chloride	75-01-4	<	0 025		<	0 005	
Chloroethane	75-00-3		0 014	J		0 031	
Methylene Chloride	75-09-2	<	0.025		<	0 005	
Acetone	67-64-1		0 046	J	<	0.02	
Carbon disulfide	75-15-0	<	0.025		<	0 005	
1,1-Dichloroethene	75-35-4	<	0 025		<	0 005	
1,1-Dichloroethane	75-34-3	<	0.025		<	0 005	
cis-1,2-Dichloroethene	156-59-2	<	0.025		<	0 005	
trans-1,2-Dichloroethene	156-60-5	<	0 025		<	0.005	
Chloroform	67-66-3 107-06-2	<	0 025 0 009	J	<	0.005	
1,2-Dichloroethane 2-Butanone	78-93-3		0.02	J	<	0 003 0 01	J
1,1,1-Trichloroethane	70-93-3 71 <i>-</i> 55-6	<	0.02		<	0.005	
Carbon tetrachloride	56-23-5	`	0 025		\ .	0.005	
Bromodichloromethane	75-27-4		0.025		ζ.	0.005	
1,2-Dichloropropane	78-87-5	<	0 025		<	0.005	
cis-1,3-Dichloropropane	10061-01-5	<	0 025		<	0.005	
Trichloroethene	79-01-6	<	0.025		<	0 005	
Dibromochloromethane	124-48-1	<	0.025		<	0 005	
1,1,2-Trichloroethane	79-00-5	<	0 025		<	0 005	
Benzene	71-43-2	ł	0.004	J	<	0.005	
trans-1,3-Dichloropropene	10061-02-6	<	0.025		<	0.005	
Bromoform	75-25-2	<	0 025		<	0.005	
4-Methyl-2-pentanone	108-10-1	<	0.05		<	0.01	
2-Hexanone Tetrachloroethene	591-78-6 127-18-4	<	0.05 0.025		<	0.01 0.005	
1,1,2,2-Tetrachloroethane	79-34-5	<	0.025		< <	0 005	
Toluene	108-88-3	~	0.025		~	0.005	
Chlorobenzene	108-90-7	<	0.025		<	0.005	
Ethylbenzene	100-41-4		0 64		<	0.005	
Styrene	100-42-5	<	0.025		<	0.005	
Xylene (total)	1330-20-7	<	0.025		<	0.005	
SVOCs (mg/L)							
4-Chloroaniline	106-47-8	<	0 005		<	0.005	
2-Methylnaphthalene	91-57-6	<	0.005		<	0.005	
2-Nitroaniline	88-74-4	<	0.005		<	0 005	
2,4,5-Trichlorophenol	95-95-4 95-57-8	<	0.005 0.005		< <	0.005 0.005	
2-Chlorophenol Phenol	95-57-6 108-95-2	`	0.005		\ \ \	0.02	
2-Nitrophenol	88-75-5	<	0.13		<	0.02	
2,4-Dimethylphenol	105-67-9	<	0.003		<	0.009	
2,4-Dichlorophenol	120-83-2	<	0.005		<	0.005	
4-Chloro-3-methylphenol	59-50-7	<	0.005		<	0.005	
2,4,6-Trichlorophenol	88-06-2	<	0.005		<	0.005	
bis(2-Chloroethyl)ether	111-44-4		0.001	J	<	0.005	
1,3-Dichlorobenzene	541-73-1	<	0.005		<	0.005	
1,4-Dichlorobenzene	106-46-7	<	0.005		<	0.005	
1,2-Dichlorobenzene	95-50-1	<	0.005		<	0.005	
Hexachloroethane	67-72-1 621-64-7		0.001 0.005	j	<	0.005	
N-nitroso-di-n-propylamine Nitrobenzene	98-95-3	< <	0.005		<	0.005 0.005	
Isophorone	78-59-1	<	0.005		<	0.005	
bis(2-Chloroethyl)methane	111-91-1	<	0.005	l	`	0.005	
1,2,4-Trichlorobenzene	120-82-1	<	0.005	ı	<	0.005	
Naphthalene	91-20-3	<	0.005		<	0.005	
Hexachlorobutadiene	87-68-3	<	0.005		<	0.005	
Hexachlorocyclopentadiene	77-47-4	<	0.015		<	0.014	
2-Chloronapthalene	91-58-7	<	0.005		<	0.005	-
Acenaphthylene	208-96-8	<	0.005		<	0.005	- 1
Dimethylphthalate	131-11-3	<	0.005	. I	<	0.005	Į
2-Methylphenol	95-48-7		0.002	J	<	0.005	

	<u> </u>				_	
	Sample ID		EW-3			EW-4
	Sample Date	.	11/21/2006		١.	11/21/2006
	Sample Type	"	nvestigatio		"	nvestigation
	Well Type		Extraction	1		Extraction
Chemical	Area CAS No.		Inside			Inside
2,2'-oxybis(1-Chloropropanne)	108-60-1	<	0 005		<	0 005
4-Methylphenol	106-44-5	`	0 005		(	0 005
Dibenzofuran	132-64-9	<	0 005			0 005
3-Nitroaniline	99-09-2	<	0 005		<	0 005
4-Nitroaniline	100-01-6	<	0 005		<	0 005
2,4-Dinitrophenol	51-28-5	<	0 058		<	0 057
4-Nitrophenol	100-02-7	<	0 029		<	0 028
2-Methyl-4,6-Dinitrophenol	534-52-1	<	0.015		<	0 014
Pentachlorophenol	87-86-5	<	0 015		<	0 014
2,6-Dinitrotoluene	606-20-2	<	0 005		<	0 005
Acenphthene	83-32-9	<	0.005		<	0 005
2,4-Dinitotoluene	121-14-2	<	0 005		<	0.005
Fluorene	86-73-7	<	0 005		<	0 005
4-Chlorophenyl-phenylether	7005-72-3	<	0.005		<	0 005
Diethyl phthalate	84-66-2	<	0 005		<	0 005
N-Nitrosodiphenylamine	86-30-6	<	0.005		<	0 005
4-Bromophenyl-phenylether	101-55-3	<	0.005		<	0 005
Hexachlorobenzene	118-74-1	<	0 005		<	0.005
Phenanthrene	85-01-8 120-12-7	<	0 005		<	0.005
Anthracene	120-12-7 84-74-2	<	0 005 0 005		< <	0.005 0.005
Di-n-butyl phthalate	206-44-0	<	0 005		1	0.005
Fluoranthene Pyrene	129-00-0	<	0.003	J	<	0.005
Butyl benzyl phthalate	85-68-7	<	0.001	J	<	0 005
Benzo(a)anthracene	56-55-3	`	0.003	J	<	0.005
Chrysene	218-01-9	ŀ	0.002	J	~	0.005
3,3'-Dichlorobenzidine	91-94-1	<	0.005	•	<	0.005
bis(2-Ethylhexyl)phthalate	117-81-7	<	0.005		<	0.005
Di-n-octyl phthalate	117-84-0	<	0.005		<	0.005
Benzo(b)fluoranthene	205-99-2	<	0.005		<	0.005
Benzo(k)fluoranthene	207-08-9	<	0.005		<	0.005
Benzo(a)pyrene	50-32-8		0 001	J	<	0.005
Indeno(1,2,3-cd)pyrene	193-39-5	<	0.005		<	0 005
Dibenz(a,h)anthracene	53-70-3	<	0.005		<	0.005
Benzo(g,h,i)perylene	191-24-2	<	0.005		<	0.005
Carbazole	86-74-8	<u> </u>	0.002	J	<	0.005
Metals (mg/L)						
Antimony	7440-36-0	<	0 02		<	0.02
Arsenic	7440-38-2	<	0.02		<	0.02
Beryllium	7440-41-7 7440-43-9	<	0.005		<	0.005
Cadmium Chromium		<	0.005		<	0.005
	7440-47-3	<	0.015		<	0.015
Copper Lead	7440-50-8 7439-92-1	_	0.0149	į	٧	0.01 0.015
		\ \ _	0.015	i	<	
Mercury Nickel	7439-97-6 7440-02-0	<	0.0002		<	0.0002
Nicker Silver	7440-02-0		0.0196 0.005			0.0103 0.005
Zinc	7440-66-6	<	0.005		<	0.005
Calcium	7440-70-2		0.0129 NA	- 1	`	NA
Iron	7439-89-6	Ì	NA NA	l		NA NA
Magnesium	7439-95-4	1	NA			NA.
Potassium	7440-09-7		NA	ŀ		NA
Sodium	7440-23-5		NA	1		NA .
Alkalinity to pH 8.3			NΑ			NA .
Alkalinity to pH 4.5			NA			NA
Total Dissolved Solids			NA			NA
Nitrite Nitrogen	14797-65-0		NA			NA
Nitrate Nitrogen	14797-55-8		NA	- }		NA
Ammonia Nitrogen	7664-41-7		NA	Ì		NA
Chloride	16887-00-6		NA	- 1		NA
Sulfate	14808-79-8		NA			NA
Bicarbonate	71-52-3		NA			NA
Carbonate	20227-92-3		NA			NA .

Notes

J - Estimated Value

#### Table 1 A

### Survey Data Five Year Review Supplemental Investigation E.H. Schilling Landfill Ironton, Ohio

Data Point*	Northing	Easting	Ground Surface Elevation (feet msl)	TOC Elevation (feet msl)	TOSC Elevation (feet msl)
DF 1	9,908.308	9,886.893	672.05	NA	NA
DF 2	9,948.729	9,980.074	698.14	NA	NA
DF 3	9,920.200	9,985,466	697.90	NA	NA
DF 4	9,886.882	9,984,143	699.32	NA	NA
DF 5	9,990.550	10.076.934	728.85	NA	NA
DF 6	9,936,682	10,081,808	726.79	NA	NA
DF 7	9,892.972	10,084,096	726.75	NA	NA
EW 1	10,066,561	10,238.846	750.50	752.17	NA
EW 2	9,992,403	10,230,036	747.44	748,84	NA
EW 3	10,019.629	10,353.044	753.53	754.90	NA
EW 4	9,919,319	9,951.813	686.89	686.87	NA
MW 1A	10,337.079	10,478.806	809.19	809.76	NA
MW 1B	10,350.399	10,487.321	809.92	810.50	NA
MW 2A	9,914.244	10,793.040	792.44	793.02	NA
MW 2B	9,906.377	10,773.335	795.63	795.38	NA
MW 3A	10,216.868	10.310.355	757.92	758.70	NA NA
MW 3B	10,225,508	10,309.463	758.36	758.88	NA
MW 4A	9,852,894	10,359.865	749.54	750.39	NA NA
MW 4B	9,846,543	10,339.407	749.06	749.62	NA NA
MW 5A	9,559,146	10,424.413	869.39	869.96	NA
MW 5B	9,569,690	10,407,497	869.56	870.32	NA
MW 6A	9,932.914	9,828.976	669.70	670.25	NA.
MW 6B	9.940.981	9.833.894	669.76	670.32	NA
MW 7A	9,956,203	9,576.920	640.88	641.38	NA.
MW 7B	9,954,762	9,569.926	640.96	641.53	NA
A8 WM	9.975.657	10.619.897	766.62	767.25	NA NA
MW 8B	9,960.881	10,616.471	766,24	767.09	NA
PZ 1	10,133,838	10.333.866	756.84	759.02	759.32
PZ 2	10,032.136	10,290,527	751.32	753.78	753.99
PZ 3	9,923.859	10,152,248	743.01	744.57	744.86
PZ 4	9929.046	10025.101	711.24	714.65	NA
PZ 5	9893.628	10026.237	711.32	712.98	NA
PZ 6	9923.454	9961.570	689.30	691.01	NA
PZ 7	9920.598	9937.520	683.58	686.00	NA NA
PZ 8	9905.151	9950.662	686.64	689.23	NA
TB 1	9,910.513	10,223.954	745.62	NA	NA
TB 2	9,917.701	10,241.306	746.51	NA	NA
TB 3	9,965.705	10,314.183	750.94	NA	NA
SEEP 1	9,909.093	9,874.358	669.56	NA	NA
SEEP 2	9,979.378	9,768.848	668.98	667.50	NA
SEEP 3	10,029.679	9,540.660	650.11	NA_	NA
SEEP 4	9,809.773	9,229.373	602.52	NA	NA

#### Notes

Plezometers PZ-4 through PZ-8 were surveyed in November 2005. All other data points were surveyed in January 2004.

All surveying activities were conducted by APX Consulting, LLC (formerly Purdom Kaskey and Associates, Inc.).

Piezometers PZ-1 through PZ-3 are constructed with a PVC stickup and outer steel casing.

Piezometers PZ-4 through PZ-8 are constructed with a PVC stickup and no outer casing.

\* - Data points are shown on Figure 1

TOC - Top of Casing

TOSC - Top of Steel Casing

DF - Dam Face

PZ - Plezometer

MW - Monitoring Well

EW - Extraction Well

TB - Test Boring

feet mal - feet mean sea level

Table 2 Comparison of Detected Constituents in Seep Samples to USEPA Drinking Water Standards and Health Advisories E.H. Schilling Landfill Data - December 4, 2003 and January 14, 2004 Ironton, Ohio

		Screening	Screening	Seep 1	Seep 2	T	Seep 1	Γ	Seep 2	·			
Chemical	CAS No.	Value	Value Type	12/4/03	12/4/03	1	1/14/04	l	1/14/04	le Max. D	et. Conc.	> Screeni	na Value
	3.2	• • • • • • • • • • • • • • • • • • • •	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		124103				,,,,,,,,	Seep 1 12/4/03	Seep 2 12/4/03		Seep 2 1/14/04
VOCs (mg/L)								1		1			
1,1,2,2-Tetrachloroethane	79-34-5	0.0003	Lifetime HA	NA J	NA	<	0.001	<	0.001	NA NA	NA	NA	NA NA
Trichloroethene	79-01-6	0.005	MCL	NA I	NA	<	0.001	<	0.001	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	0.2	MCL	NA	NA	<	0.001	<	0.001	NA.	NA	NA	NA.
1,1-Dichioroethane	75-34-3			NA	NA	<	0.001	<	0.001	NA NA	NA .	NA	NA NA
1,1-Dichloroethene	75-35-4	0.007	MCL	NA	NA	<	0.001	<	0.001	NA.	NA	NA	NA
1,2-Dichloroethane	107-06-2	0.005	MCL	NA	NA		0.0001 J		0.0002	J NA	NA	No	No
1,1,2-Trichloroethane	79-00-5	0.005	MCL I	NA İ	NA	<	0.001	<	0.001	NA NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	0.005	MCL	NA I	NA	<	0.001	<	0.001	NA NA	NA	NA	NA
2-Butanone	78-93-3	20	DWEL	NA	NA	<	0.005	<	0.005	NA	NA	NA	NA
2-Hexanone	591-78-6		1	NA	NA	<	0.005	<	0.005	NA	NA	NA	NA
4-Methyl-2-pentanone	108-10-1			NA I	NA	<	0.005	<	0.005	NA NA	NA	NA	NA
Acetone	67-64-1		ĺ	NA	NA	<	0.005	<	0.005	l NA	NA	NA	NA
Benzene	71-43-2	0.005	MCL I	NA I	NA	<	0.001	<	0.001	NA.	NA	NA	NA
Bromomethane	74-83-9	0.01	Lifetime HA	NA	NA	<	0.001	<	0.001	l na	NA	NA	NA
Bromodichloromethane	75-27-4	0.08	MCL	NA	NA	<	0.001	<	0.001	NA	NA	NA	NA
Bromoform	75-25-2	0.08	MCL	NA I	NA	<	0.001	<	0.001	l NA	NA	NA	NA
Carbon disulfide	75-15-0			NA	NA	<	0.001	<	0.001	NA NA	NA	NA	NA
Carbon tetrachloride	56-23-5	0.005	MCL	NA	NA	<	0.001	<	0.001	NA NA	NA	NA	NA
Chlorobenzene	108-90-7	0.1	MCL	NA	NA	<	0.001	) <	0.001	NA	NA	NA	NA
Chioroethane	75-00-3			NA I	NA		0.0007 J		0.0007	JI NA	NA	NA	NA
Chloroform	67-66-3	0.08	MCL	NA	NA	<	0.001	<	0.001	NA	NA	NA	NA
Chloromethane	74-87-3	0.003	Lifetime HA	NA	NA	<b> </b> <	0.001	۱ <	0.001	l NA	NA	NA	Í NA
Dibromochloromethane	124-48-1	0.08	MCL	NA	NA	<	0.001	<	0.001	NA	NA.	NA	NA
cis-1,2-Dichloroethene	156-59-2	0.07	MCL	NA	NA	<	0.001	<	0.001	NA	NA	NA	NA
trans-1,2-dichloroethene	156-60-5	0.1	MCL	NA	NA	<	0.001	<	0.001	NA.	NA	NA	NA
cis-1,3-Dichloropropene	10060-01-5			NA	NA	<	0.001	<	0.001	NA.	NA	NA	NA
trans-1,3-dichloropropene	10061-02-6			NA I	NA	<	0.001	<	0.001	NA	NA	NA	NA.
Ethylbenzene	100-41-4	0.7	MCL	NA NA	NA NA	<	0.001	<	0.001	NA.	NA.	NA	NA
Methylene Chloride	75-09-2	0.005	MCL	NA	NA	<	0.002	<	0.002	NA.	NA	NA	NA
Styrene	100-42-5	0.1	MCL	NA I	NA	<	0.001	<	0.001	NA.	NA.	NA.	NA
Tetrachloroethene	127-18-4	0.005	MCL	NA I	NA NA	<	0.001	<	0.001	NA.	NA	NA.	NA
Toluene	108-88-3	1	MCL	NA I	NA NA	<	0.001	<	0.001	NA.	NA.	NA.	NA
Vinvl Chloride	75-01-4	0.002	MCL	NA I	NA NA	<	0.001	<	0.001	NA NA	NA.	NA.	NA
Xylene (total)	1330-20-7	10	MCL	NA I	NA NA	<	0.001	<	0.001	NA.	NA	NA.	NA

Table 2 Comparison of Detected Constituents in Seep Samples to USEPA Drinking Water Standards and Health Advisories E.H. Schilling Landfill Data - December 4, 2003 and January 14, 2004 Ironton, Ohio

Chemical	CAS No.	Screening Value	Screening Value Type		Seep 1 12/4/03		Seep 2 12/4/03		Seep 1 1/14/04		Seep 2 1/14/04	le May 5	ot Com	> Screeni	as Value
Chemical	CAS No.	value	value Type		12/4/03		12/4/03	l	1/14/04	1	1/14/04	Seep 1		Seep 1	Seep 2
						1				1		12/4/03	12/4/03	1/14/04	1/14/04
SVOCs (mg/L)				_		_						NA	NA	NA	ÑΑ
2-Methyl-4,6-Dinitrophenol	534-52-1			<	0.012	<	0.012	<	0.013	<	0.013	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9		:	<	0.005	<	0.005	<	0.005	<	0.005	NA I	NA	NA	NA
2,4-Dichlorophenol	120-83-2	0.02	Lifetime HA	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	0.01	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	0.04	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2-Chlorophenol	95-57-8	0.04	Lifetime HA	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2-Methylphenol	95-48-7			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane	108-60-1			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA .
2-Methylnaphthalene	91-57-6			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Naphthalene	91-20-3	0.1	Lifetime HA	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	0.07	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA I
Hexachlorocyclopentadiene	77-47-4	0.05	MCL	<	0.012	<	0.012	<	0.013	<	0.013	NA NA	NA	NA	NA
2-Chloronapthalene	91-58-7			<	0.005	<	0.005	<	0.005	<	0.005	NA NA	NA	NA	NA
2-Nitroaniline	88-74-4			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Nitrobenzene	98-95-3			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
4-Chloroaniline	106-47-8			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2-Nitrophenol	88-75-5	0.06	Lifetime HA	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	0.6	Lifetime HA	<	0.005	<	0.005	<	0.005	1 <	0.005	NA	NA I	NA	NA
1.4-Dichlorobenzene	106-46-7	0.075	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	0.6	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Hexachloroethane	67-72-1	0.04	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	621-64-7			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
4-Methylphenol	106-44-5			<	0.005	<	0.005	<	0.005	<	0.005	NA .	NA .	NA	NA
Anthracene	120-12-7	10	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA NA	NA NA	NA	NA
Acenapthylene	208-96-8			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA NA	NA	NA J
Acenapthene	83-32-9	2	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Dimethylphthalate	131-11-3	_		<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5			<	0.029	<	0.029	<	0.03	<	0.03	NA	NA	NA	NA
4-Nitrophenol	100-02-7	0.06	Lifetime HA	<	0.024	<	0.024	<	0.025	<	0.025	NA	NA	NA	NA I
2.4-Dinkrotoluene	121-14-2	0.1	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3		- · · · <u></u>	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA I
Benzo(a)pyrene	50-32-8	0.0002	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA.	NA	NA	NA
Benzo(b)fluoranthene	205-99-2			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA

Table 2 Comparison of Detected Constituents in Seep Samples to USEPA Drinking Water Standards and Health Advisories E.H. Schilling Landfill Data - December 4, 2003 and January 14, 2004 fronton, Ohio

		Screening	• • • • • • • • • • • • • • • • • • • •		Seep 1		Seep 2	Π	Seep 1	Π	Seep 2				$\overline{}$
Chemical	CAS No.	Value	Value Type		12/4/03	ļ	12/4/03	1	1/14/04		1/14/04	is Max. D		> Screeni	
1	1					ł		1		ł		Seep 1	Seep 2	Seep 1	Seep 2
								<u>.                                    </u>		<u></u>		12/4/03	12/4/03	1/14/04	1/14/04
bis(2-Chloroethyl)ether	111-44-4			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	111-91-1			<	0.005	<	0.005	<b> </b> <	0.005	<	0.005	NA NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	0.07	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Butyl benzyl phthalate	85-68-7	7	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Carbazole	86-74-8			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Chrysene	218-01-9			<	0.005	<	0.005	<	0.005	<	0.005	NA NA	NA	NA	NA
Dibenzofuran	132-64-9			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
3-Nitroaniline	99-09-2			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
4-Nitroaniline	100-01-6			<	0.005	<	0.005	<	0.005	<	0.005	NA NA	NA	NA	NA
Diethyl phthalate	84-66-2	30	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	I NA I
Di-n-butyl phthalate	84-74-2	4	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Di-n-octyl phthalate	117-84-0			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	l na l
N-Nitrosodiphenylamine	86-30-6			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
4-Bromophenly-phenylether	101-55-3		' I	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	0.001	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Fluoranthene	206-44-0			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA NA	NA
Fluorene	86-73-7	1	DWEL	<	0.005	<	0.005	<	0.005	<	0.005	NA.	NA	NA	NA
Indeno(1,2,3-cd)pyrene	193-39-5	·		<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Dibenz(a,h)anthracene	53-70-3			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Benzp(g,h,i)perylene	191-24-2		ļ	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA
Isophorone	78-59-1	0.1	Lifetime HA	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA.	NA I
Pentachlorophenol	87-86-5	0.001	MCL	<	0.012	<	0.012	<	0.013	<	0.013	NA	NA	NA	NA I
Phenanthrene	85-01-8			<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA I
Phenol	108-95-2	4	Lifetime HA	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA.	NA	NA
Pyrene	129-00-0	,	2	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA .	NA	NA
Dissolved Metals (mg/L)						_	0.000	+		$\vdash$		NA NA	NA	NA	NA
Antimony	7440-36-0	0.006	MCL	<	0.02	<	0.02	<b> </b> <	0.02	<	0.02	NA	NA	NA	NA
Arsenic	7440-38-2	0.05	MCL	<	0.01	<	0.01	<	0.01	<	0.01	NA.	NA	NA.	NA
Aluminum	7429-90-5	0.2	SDWR	<	0.2	<	0.2	<	0.2	<	0.2	NA	NA .	NA	NA
Bervillum	7440-41-7	0.004	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA.	NA.	NA.	NA
Cadmium	7440-43-9	0.005	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA NA	NA I	NA NA	NA I
Chromium	7440-47-3	0.003	MCL	`	0.005	`	0.005	~	0.005	~	0.005	NA NA	NA.	NA.	NA
Copper	7440-50-8	1.3	Action Level	` <	0.01	~	0.003	~	0.003	<	0.001	NA NA	NA NA	NA NA	NA I
liron	7439-89-6	0.3	SDWR	•	0.442	~	0.2	1	0.841	~	0.001	YES	NA NA	YES	NA I
Lead	7439-09-01	0.015	Action Level	<	0.442	~	0.02	<	0.02	~	0.02	NA NA	NA NA	NA NA	NA I
Magnesium	7439-92-1	0.015	Venou reset	_	14.7	l `	16.2	1 `	16.1	`	17.5	NA NA	NA NA	NA NA	NA NA
Manganese	7439-95-4	0.05	SDWR		0.453		0.181	1	0.851		0.0799	YES	YES	YES	YES
	7439-96-5	0.05	MCL	<	0.0002	<	0.0002	<	0.0002	<	0.0799	NA NA	NA NA	NA NA	NA NA
Mercury	1409-91-6	0.002	MICL		0.0002	ഥ`_	0.0002	⊥`	0.0002		0.0002	T 110	LIVA	11/	<u> </u>

Table 2 Comparison of Detected Constituents in Seep Samples to USEPA Drinking Water Standards and Health Advisories E.H. Schilling Landfill Data - December 4, 2003 and January 14, 2004 Ironton, Ohio

Chambal	CAC No	Screening	Screening		Seep 1		Seep 2	Τ	Seep 1		Seep 2				
Chemical	CAS No.	Value	Value Type		12/4/03		12/4/03	1	1/14/04		1/14/04			> Screeni	
										ļ		Seep 1 12/4/03	Seep 2 12/4/03	Seep 1 1/14/04	Seep 2 1/14/04
Nickel	7440-02-0	0.1	Lifetime HA		0.0053 J		0.0043 .	J	0.0067 J	<	0.01	No	No	No	NA
Silver	7440-22-4	0.1	Lifetime HA	<	0.005	<	0.005	<	< 0.005	<	0.005	NA	NA	NA	NA
Zinc	7440-66-6	2	Lifetime HA		0.0052 J	<	0.02	1	0.0049 J	<	0.02	No	NA	No	NA
Sodium	7440-02-2		<b>!</b>	J	13.1	]	18.6	-	13.5	ļ	17.9	NA	NA	NA	NA
Potassium	7440-09-7				2.66		4.84		2.45	1	5.33	NA	NA	NA	NA
Calcium	7440-70-2		i		61,1	1	76.4	1	64.2		86.7	NA	NA	NA	NA
Total Metals (mg/L)								"				NA	NA	NA	NA
Antimony	7440-36-0	0.006	MCL	<	0.02	<	0.02	<	< 0.02	<	0.02	l NA	NA	NA	NA
Arsenic	7440-38-2	0.05	MCL	<	0.01	<	0.01	<	0.01	<	0.01	NA NA	NA I	NA	NA I
Aluminum	7429-90-5	0.2	SDWR		0.565	<	0.2		0.833	<	0.2	YES	NA	YES	NA
Beryllium	7440-41-7	0.004	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NΑ
Cadmium	7440-43-9	0.005	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA	NA	NA	NA .
Chromium	7440-47-3	0.1	MCL	<	0.005	<	0.005	<	0.005	<	0.005	NA I	NA	NA	NA
Copper	7440-50-8	1.3	Action Level	<	0.01	<	0.01	<	0.01	<	0.01	NA	NA	NA	NA
Iron	7439-89-6	0.3	SDWR		1.37		0.0745	ار	1.91	i	0.426	YES	No	YES	YES
Lead	7439-92-1	0.015	Action Level	<	0.02	<	0.02	<	< 0.02	<	0.02	NA '	NA	NA	NA
Magnesium	7439-95-4				15,1		16	1	15.8		17.4	NA .	NA	NA	NA
Manganese	7439-96-5	0.05	SDWR		0.503		0.18	1	0.866		0.0853	YES	YES	YES	YES
Mercury	7439-97-6	0.002	MCL	<	0.0002	<	0.0002	<	0.0002	<	0.0002	NA	NA	NA	NA
Nickel	7440-02-0	0.1	Lifetime HA	<	0.01	<	0.01	ł	0.0077 J	<	0.01	l na	NA	No	NA
Silver	7440-22-4	0.1	Lifetime HA	<	0.005	<	0.005	<	< 0.005	<	0.005	NA.	NA	NA	NA
Zinc	7440-66-6	2	Lifetime HA	1	0.0095 J	ł	0.0042	ار	0.0089 J	<	0.02	No	No	No	NA
Sodium	7440-02-2	-			14.2		18.5	1	13.2	1	17.8	NA	NÄ	NA	NA
Potassium	7440-09-7			ļ	2.79		4.78		2.53		5.3	NA	NA	NA	NA
Calcium	7440-70-2				61.9		75.8		62.5	l	86.2	NA	NA	NA	NA
Other Parameters (mg/L)								1			·	NA	ÑĀ	NA	NA
Total Dissolved Solids		500	SDWR		322		337	1	324	i	387	No	No	No	No
Chloride	16887-00-6	250	SDWR	[	5.3	[	19.4	1	7.8	(	21.9	No	No	No	No
Sulfate	14808-79-8		SDWR		114	i .	51.8	1	122	1	89.2	No	No	No	No
Alkalinity to pH 8.3				<	2	<	2	<		<	2	NA	NA	NA	NA
Alkalinity to pH 4.5					115	İ	210		116		203	NA	NA	NA	NA
Bicarbonate	71-52-3				115		210	1	116		203	NA	NA	NA	NA
Field Parameters						$\vdash$		$\top$		<del>                                     </del>		NA	NA	NA	NA
lpH		6.5-8.5	SDWR		7	1	7.2		7	i i	7.2	No	No	No	No
Specific Conductance	į	0.0 0.0		ì	470	Ì	564	1	493	l	645	NA.	NA I	NA	NA I
Temperature					8.5		19	1	5	l	17.6	NA	NA	NA	NA
NA Not Applicable Ethern			L					ш.	·			<del></del>			ـــــــــــــــــــــــــــــــــــ

NA-Not Applicable. Either no standard exists or the parameter result is a non-detect value.

MCL-Maximum Contaminant Level.

DWEL-Drinking Water Equivalent Level.

Lifetime HA (Health Advisory)-The concentration of a chemical in drinking water that is not expected to cause adverse noncarcinogenic effects for a lifetime of exposure.

Action Level- Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. If more than 10%

tap water exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

SDWR-Secondary Drinking Water Regulation-non-enforceable federal guidelines regarding cosmetic effects (such as tooth or skin discoloration) or aesthetic effects (such as taste, odor, or color) of drinking water.

		Date	1/4	4/05	1/1	0/05	1/1	9/05	1/2	6/05	2/	1/05	2/8	3/05	2/1	5/05	2/2	8/05	3/8/	2005	3/1	5/05	3/2	1/05	4/5/	2005	4/1	2/05	4/1	9/05
		Time	10	):30	13	3:30	15	:00	13	:00	13	3:30	13	:00	13	3:00	14	:00		:30	9:	:30	13	:00	10	:30	13	3:00	13	3:30
Well/Piezometer	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)
EW 1	750.50	752.17	42.38	709.79	43.03	709.14	42.76	709.41	40.97	711.20	40.35	711.82	41.83	710.34	43.00	709.17	40.58	711.59	42.60	709.57	45.00	707.17	40.78	711.39	42.96	709.21	44.20	707.97	44.10	708.07
EW 2	747.44	748.84	23.07	725.77	29.38	719.46	29.78	719.06	29.36	719.48	29.39	719.45	26.80	722.04	29.37	719.47	29.36	719.48	29.82	719.02	29.38	719.46	29.38	719.46	29.48	719.36	29.34	719.50	29.40	719.44
EW 3	753.53	754.90	35.36	719.54	34.60	720.30	34.72	720.18	35.38	719.52	35.69	719.21	34.23	720.67	32.73	722.17	35.05	719.85	34.90	720.00	36.01	718.89	35.30	719.60	36.70	718.20	39.24	715.66	38.70	716.20
EW 4	686.89	686.87	12.50	674.37	14.50	672.37	12.60	674.27	13.18	673.69	11.34	675.53	13.46	673.41	14.10	672.77	12.36	674.51	10.94	675.93	14.20	672.67	14.76	672.11	12.48	674.39	11.40	675.47	13.20	673.67
PZ-1	756.84	759.32	23.20	736.12	23.16	736.16	22.94	736.38	22.94	736.38	23.06	736.26	22.90	736.42	22.90	736.42	22.61	736.71	22.88	736.44	23.04	736.28	22.92	736.40	22.96	736.36	22.70	736.62	22.78	736.54
PZ-2	751.32	753.99	26.13	727.86	26.13	727.86	25.73	728.26	25.57	728.42	26.07	727.92	25.69	728.30	25.72	728.27	25.08	728.91	25.46	728.53	26.00	727.99	25.88	728.11	25.76	728.23	25.33	728.66	25.54	728.45
PZ-3	743.01	744.86	20.80	724.06	20.96	723.90	20.39	724.47	20.17	724.69	20.70	724.16	20.35	724.51	20.32	724.54	19.72	725.14	20.02	724.84	20.54	724.32	20.39	724.47	20.12	724.74	19.76	725.10	19.98	724.88
PZ-4	711.24	714.65	NI	NI																										
PZ-5	711.32	712.98	NI	NI	NI	·NI	NI	NI	NI	NI	NI	NI	NI	NI .	NI	NI														
PZ-6	689.30	691.01	NI	NI	NI	,NI	NI	NI	NI	NI	NI	NI																		
PZ-7	683.58	686.00	NI	NI																										
PZ-8	686.64	689.23	NI	NI																										

Depth to the water table measured from the top of steel casing at PZ-1 through PZ-3.

Depth to the water table measured from the top of PVC stickup at PZ-4 through PZ-8.

NI - Not Installed

NM - Not Measured

feet msl - feet mean sea level

ndicates pump shutdown

Table 2A

		Date	-	5/05		/2005		0/05		7/05		3/05		1/05		2005	6/1:	3/05	6/2	1/05		7/05	7/5/	2005		2/05		8/05		5/05
		Time	13	3:30	13	3:30	13	:00	13	:00	11	:00	14	:00	14	:00	10	:00	13	:00	12:	30	14	:00	10	:00	10	:30	13	1:30
Well/Piezometer	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation
EW 1	750.50	752.17	44.75	707.42	44.70	707.47	44.80	707.37	45.10	707.07	44.70	707.47	44.69	707.48	44.73	707.44	42.38	709.79	44.25	707.92	44.70	707.47	44.47	707.70	44.47	707.70	44.47	707.70	44.50	707.67
EW 2	747.44	748.84	29.42	719.42	20.88	727.96	29.01	719.83	29.44	719.40	30.08	718.76	29.44	719.40	29.46	719.38	29.44	719.40	29.07	719.77	30.10	718.74	29.90	718.94	27.92	720.92	29.25	719.59	20.58	728.20
EW 3	753.53	754.90	37.92	716.98	25 (0)	729.60	24 68	730.21	37.76	717.14	36.66	718.24	37.65	717.25	37.67	717.23	39.50	715.40	39.46	715.44	39.48	715.42	39.25	715.65	31 00	723.90	24.38	730.52	37.50	717.40
EW 4	686.89	686.87	12.20	674.67	14.02	672.85	11.10	675.77	15.70	671.17	11.92	674.95	13.50	673.37	14.44	672.43	16.00	670.87	11.80	675.07	13.28	673.59	14.30	672.57	14.10	672.77	13.60	673.27	12.22	674.65
PZ-1	756.84	759.32	22.76	736.56	22.88	736.44	22.76	736.56	22.80	736.52	22.61	736.71	22.81	736.51	22.89	736.43	22.93	736.39	23.12	736.20	23.23	736.09	23.10	736.22	23.22	736.10	23.35	735.97	23.40	735.92
PZ-2	751.32	753.99	25.21	728.78	25.63	728.36	25.35	728.64	25.45	728.54	25.03	728.96	25.52	728.47	25.42	728.57	25.35	728.64	25.65	728.34	25.67	728.32	25.36	728.63	25.39	728.60	25.53	728.46	25.47	728.52
PZ-3	743.01	744.86	19.62	725.24	19.98	724.88	19.84	725.02	19.90	724.96	19.51	725.35	19.99	724.87	19.94	724.92	19.90	724.96	20.20	724.66	20.28	724.58	19.98	724.88	20.04	724.82	20.19	724.67	20.15	724.71
PZ-4	711.24	714.65	NI	NI	NI	NI	NI -	NI	NI	NI																				
PZ-5	711.32	712.98	NI	NI	NI	NI																								
PZ-6	689.30	691.01	NI	NI	NI	NI																								
PZ-7	683.58	686.00	NI	NI	NI	NI																								
PZ-8	686.64	689.23	NI	NI	NI	NI																								

Depth to the water table measured from the top of steel casing at PZ-1 through PZ-3.

Depth to the water table measured from the top of PVC stickup at PZ-4 through PZ-8.

NI - Not Installed

NM - Not Measured

ndicates pump shutdown

		Date	8/3/	/2005	8/9/	2005	8/1	8/05	8/2	4/05	8/3	31/05	9/7	7/05	9/1	3/05	9/2	0/05	9/2	7/05	10/	/3/05	10/	11/05	10/1	8/05	10/1	9/05	10/2	25/05
		Time	11	:00	11	:00	10	:00	12	2:00	13	3:00	12	:30	15	:00	10	:30		:00	14	1:00		2:30	12	:30	9:	00	13	3:30
Well/Piezometer	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)
EW 1	750.50	752.17	44.54	707.63	34787	7/17/30	26,02	7/26:15	27.05	725.12	42.42	709.75	43.82	708.35	44.40	707.77	43.77	708.40	41.61	710.56	43.15	709.02	43.75	708.42	37.78	714.39	34.09	718.08	43.66	708.51
EW 2	747.44	748.84	29.30	719.54	20.74	728.10	20.54	728.30	29.28	719.56	21.90	726.94	29.28	719.56	29.28	719.56	29.30	719.54	30.93	717.91	30.94	717.90	20.88	727.96	20.81	728.03	20.85	727.99	20.78	728.06
EW 3	753.53	754.90	36.15	718.75	25.75	729 15	24.16	730.74	37.88	717.02	36.86	718.04	34.98	719.92	37.34	717.56	37.00	717.90	35.42	719.48	35.91	718.99	38.10	716.80	32.21	722.69	28.92	725.98	39.30	715.60
EW 4	686.89	686.87	13.75	673.12	7.45	679.42	3.98	682.89	12.30	674.57	11.45	675.42	14.10	672.77	10.90	675.97	12.20	674.67	15.15	671.72	13.24	673.63	5.00	681.87	973	587.99	6.50	680.37	13.94	672.93
PZ-1	756.84	759.32	23.60	735.72	23.68	735.64	23.78	735.54	23.94	735.38	23.97	735.35	24.00	735.32	23.88	735.44	24.05	735.27	24.16	735.16	24.20	735.12	24.32	735.00	24.39	734.93	24.43	734.89	24.54	734.78
PZ-2	751.32	753.99	25.58	728.41	25.65	728.34	25.50	728.49	25.72	728.27	25.48	728.51	25.96	728.03	25.67	728.32	25.90	728.09	25.92	728.07	26.08	727.91	25.89	728.10	25.80	728.19	25.85	728.14	25.77	728.22
PZ-3	743.01	744.86	20.25	724.61	20.30	724.56	20.22	724.64	20.42	724.44	20.12	724.74	20.61	724.25	20.32	724.54	20.55	724.31	20.52	724.34	20.70	724.16	20.53	724.33	20.45	724.41	20.50	724.36	20.31	724.55
PZ-4	711.24	714.65	NI	NI	24.42	690.23	NM	NM	NM	NM	22.57	692.08																		
PZ-5	711.32	712.98	NI	NI	Dry	NM	NM	NM	NM	NM	>19.84	>693.14																		
PZ-6	689.30	691.01	NI	NI	NM	NM	NM	NM	NM	NM	12.25	678.76																		
PZ-7	683.58	686.00	NI	NI	NM	NM	NM	NM	NM	NM	11.96	674.04																		
PZ-8	686.64	689.23	NI	NI	NM	NM	NM	NM	NM	NM	8.70	680.53																		

Notes

Depth to the water table measured from the top of steel casing at PZ-1 through PZ-3. Depth to the water table measured from the top of PVC stickup at PZ-4 through PZ-8.

NI - Not Installed

NM - Not Measured

feet msl - feet mean sea level

indicates pump malfunction indicates pump shutdown

		Date		1/05		8/05		5/2005		22/05		29/05		6/05		3/05		20/05		27/05
		Time	14	:30	14	:30	11	:30	10	:30	12	:30	13	:30	14	:00	14	:00	12	2:30
Well/Piezometer	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation
EW 1	750.50	752.17	44.50	707.67	43.96	708.21	42.27	709.90	41.01	711.16	41.77	710.40	41.95	710.22	27776	724.4	26,65	(2-3-52	Asta(s)	1925
EW 2	747.44	748.84	20.89	727.95	21 14	727.70	20.95	727.89	20.84	728.00	20.91	727 93	21.19	727.65	21.22	727 62	21.25	727.59	21.16	727 6
EW 3	753.53	754.90	35.55	719.35	24.80	730.10	24.72	730 18	24.44	730.46	24,58	730.32	24 92	729.98	24,98	729 92	25.08	729.82	24,83	730 C
EW 4	686.89	686.87	13.70	673.17	10.92	675.95	11.12	675.75	14.88	671.99	13.80	673.07	11.75	675.12	12.65	674.22	13.30	673.57	15.75	671.1
PZ-1	756.84	759.32	25.16	734.16	25.55	733.77	25.97	733.35	25.58	733.74	26.32	733.00	27.56	731.76	27.60	731.72	27.78	731.54	27.33	731.9
PZ-2	751.32	753.99	25.90	728.09	25.98	728.01	25.90	728.09	25.57	728.42	25.75	728.24	26.30	727.69	26.28	727.71	26.30	727.69	25.94	728.0
PZ-3	743.01	744.86	20.53	724.33	20.59	724.27	20.52	724.34	20.24	724.62	20.33	724.53	20.89	723.97	20.88	723.98	20.91	723.95	20.54	724.3
PZ-4	711.24	714.65	22.75	691.90	22.75	691.90	22.76	691.89	22.64	692.01	22.69	691.96	22.86	691.79	22.85	691.80	22.97	691.68	22.75	691.9
PZ-5	711.32	712.98	>19.84	>693.14	>19.84	>693.14	20.02	692.96	20.02	692.96	20.05	692.93	20.05	692.93	19.10	693.88	19.60	693.38	19.14	693.8
PZ-6	689.30	691.01	14.81	676.20	12.54	678.47	13.01	678.00	14.24	676.77	13.98	677.03	11.83	679.18	12.08	678.93	12.08	678.93	12.79	678.2
PZ-7	683.58	686.00	12.14	673.86	12.46	673.54	12.89	673.11	13.25	672.75	13.57	672.43	13.91	672.09	14.12	671.88	14.32	671.68	14.38	671.6
PZ-8	686.64	689.23	9.15	680.08	9.22	680.01	9.26	679.97	9.00	680.23	9.18	680.05	8.72	680.51	9.00	680.23	8.93	680.30	9.10	680.1

Notes

Depth to the water table measured from the top of steel casing at PZ-1 through PZ-3.

Depth to the water table measured from the top of PVC stickup at PZ-4 through PZ-8.

NI - Not Installed

NM - Not Measured

feet msl - feet mean sea level

indicates pump malfunction

Summary of Groundwater Elevations for 2006 - Year to Date Five Year Review Supplemental Investigation E.H. Schilling Landfill - January 2006 through March 2006 Ironton, Ohio

		Date	1/4	1/06	1/1	0/06	1/1	7/06	1/2	4/06	1/3	0/06	2/7	7/06	2/1	4/06	2/2	1/06	2/2	8/06	3/6	6/06	3/1	3/06	3/2	0/06
		Time	14	:30	13	:30	13	:30	14	:00	13	3:00	13	3:00	12	:00	13	:00	13	:00	14	:00	13	3:00	13	3:00
Well/Piezometer	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)	Depth to Water Table (feet)	Groundwater Level Elevation (feet msl)
EW 1	750.50	752.17	32.73	719.44	32.85	719.32	43.20	708.97	36.76	715.41	36.50	715.67	42.55	709.62	37.01	715.16	33.34	718.83	42.66	709.51	40.77	711.40	42.40	709.77	213/12	72.57
EW 2	747.44	748.84	21.05	7727773	21.40	7277.34	20.98	727.86	28.72	720.12	27.05	721.79	21.32	727.52	29.18	719.66	22.03	726.81	28.47	720.37	28.51	720.33	28.77	720.07	29.25	719.59
EW 3	753.53	754.90	24 82	7810.08	0.50	790071	32.45	722.45	29.20	725.70	29.03	725.87	34.21	720.69	31.81	723.09	34.37	720.53	32.81	722.09	33.80	721.10	35.40	719.50	39.10	715.80
EW 4	686.89	686.87	14.90	671.97	14.82	672.05	15.90	670.97	13.00	673.87	12.55	674.32	11.91	674.96	11.80	675.07	14.90	671.97	11.70	675.17	14.93	671.94	13.10	673.77	15.82	671.05
PZ-1	756.84	759.32	27.29	732.03	28.10	731.22	26.56	732.76	26.77	732.55	25.75	733.57	26.47	732.85	25.77	733.55	25.41	733.91	25.16	734.16	25.45	733.87	25.36	733.96	25.75	733.57
PZ-2	751.32	753.99	25.88	728.11	26.44	727.55	25.60	728.39	25.95	728.04	25.81	728.18	26.38	727.61	26.30	727.69	26.21	727.78	26.11	727.88	26.22	727.77	25.95	728.04	26.40	727.59
PZ-3	743.01	744.86	20.33	724.53	21.01	723.85	20.14	724.72	20.48	724.38	20.35	724.51	20.84	724.02	20.77	724.09	20.74	724.12	20.58	724.28	20.64	724.22	20.40	724.46	20.88	723.98
PZ-4	711.24	714.65	20.88	693.77	20.94	693.71	20.58	694.07	20.44	694.21	20.58	694.07	20.55	694.10	20.62	694.03	20.55	694.10	20.81	693.84	22.07	692.58	20.46	694.19	21.34	693.31
PZ-5	711.32	712.98	19.07	693.91	19.37	693.61	18.88	694.10	18.91	694.07	19.10	693.88	18.91	694.07	19.10	693.88	18.81	694.17	18.93	694.05	19.42	693.56	18.52	694.46	19.20	693.78
PZ-6	689.30	691.01	11.70	679.31	11.86	679.15	11.51	679.50	10.31	680.70	10.30	680.71	10.03	680.98	10.23	680.78	10.58	680.43	10.20	680.81	11.21	679.80	10.92	680.09	10.42	680.59
PZ-7	683.58	686.00	14.48	671.52	14.59	671.41	14.59	671.41	14.65	671.35	14.57	671.43	14.52	671.48	14.50	671.50	14.58	671.42	14.56	671.44	14.61	671.39	14.60	671.40	14.57	671.43
PZ-8	686.64	689.23	8.28	680.95	8.50	680.73	7.84	681.39	6.90	682.33	7.09	682.14	6.92	682.31	7.28	681.95	7.25	681.98	7.52	681.71	8.24	680.99	7.95	681.28	7.48	681.75

Notes:

Depth to the water table measured from the top of steel casing at PZ-1 through PZ-3. Depth to the water table measured from the top of PVC stickup at PZ-4 through PZ-8.

feet msl - feet mean sea leve

indicates pump malfunction indicates pump shutdown

able3	Volume of Trea	ated Water Dis	charged at the	E.H. Schilling	Landfill							Volume of Tre	ated Water Dis	charged at the	E.H. Schilling Landfill			
	Ironton, Ohio											Ironton, Ohio						
		Total Discharged		1996 Gallons	1997 Gallons	1998 Gallons	4000 D H	*****	*****	2222 0 11	2002 0 1	2004 Gallons	2007.0-11	*****				-
Month	1993 Gallons Discharged	1994 Gallons Discharged	1995 Gallons Discharged	Discharged	Discharged	Discharged	1999 Gallons Discharged	2000 Gallons Discharged	2001 Gallons Discharged	2002 Gallons Discharged	2003 Gallons Discharged	Discharged	2005 Gallons Discharged	2006 Gallons Discharged	2007 Gallons Discharged			-
anuary	Distriction	64,186	42,669	37,648	23,224	18,030	13,686	12,053	7,912			25,440	38,000	23,204	32,374			-
ebruary		11,049	43,043	30,479	17,228	5,640	14,115	10,580	7,433		16,163		31,364	15,677	30,278	3 11		1
ferch		40,083	28,903	36,251	23,371	34,873	14,108	11,735	6,203		28,553		35,062	29,484	24,816			-
\pril		70,392	37,758	37,437	40,835	24,336	26,777	18,164	6,388		30,397	35,755	36,511	19,483				
Any		46,959	46,675	37,471	20,855	28,046	10,794	15,720	9,665	23,380	22,360		29,642	30,128		THE CHARLES		
lune	75,228	36,265	46,706	27,209	24,491	24,324	15,945	13,286	8,569		31,660		32,108	14,890				
July	31,362	20,048	27,404	29,599	26,856	22,726	11,095	10,389	13,898	0	24,160		0	14,867				
August	62,324	14,982	36,578	18,479	20,347	16,271	8,524	12,755	6,293		26,154	29,345	18,550	0				
September	23,432	16,266	36,766	13,797	12,016	13,621	10,908	10,181	5,798		0	0	16,206	0		19		
October	29,431	12,175	42,748	21,655	16,048	21,143	8,654	9,916	8,630		31,394	32,280	28,607	33,745				
November	46,180	17,193	26,523	13,988	8,171	13,168	9,554	11,459	8,968		0	0	0	20,098		100		
December	13,933	41,414	13,657	14,897	16,547	10,382	9,407	6,509	1,927	22,121	37,711	32,513	0	16,727				
TOTAL	281,890	391,012	429,428	318,909	249,989	232,560	153,564	142,746	91,684	126,660	248,552	280,781	264,050	218,303	87,465	3,517,593	Total Volume Disc	harged
	Volume of Tota	l Water Pump	ed at the E.H.	Schilling Land	fill to Date				•			Volume of Tot	al Water Pump	ed at the F.H.	Schilling Landfill to Da	te		+
	Ironton, Ohlo											Ironton, Ohio						
	2 054 379	Total Pumped to I	)ete															
	1993 Gallons	1994 Gallons	1995 Gallons	1996 Gallons	1997 Gallons	1996 Gallons	1999 Gallons	2000 Gallons	2001 Gallons	2002 Gallons	2003 Gallons	2004 Gallons	2005 Gallons	2006 Gallons	2007 Gallons	Total Pumped		+
lonth	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	EW-1.2.3		
anuary		21,791	41,694	22,667	19,715	17,303	13,193	9,502	5,632		15,238		35,352	21,058	30,395	828,822		1
ebruary		75,496	44,511	31,199	16,772	19,705	15,216	9,723	8,402		10,175		34,330	22,159	15,994			
larch		91,890	43,227	43,910	28,932	22,882	18,128	16,079	10,828		21,530		24,206	19,910	27,609	Total Pumped		
\pril		78,793	45,943	37,025	30,464	24,761	24,777	16,624	12,442		25,798		44,052	23,698		EW-4		
		84,136	39,852	46,075	29,720	37,716	15,228	15,388	17,073	24,399	31,667	30,023	38,203	28,656		2,695,559		
ABV	No Data in Status	64,009	47,644	29,838	24,656	28,293	11,845	14,310	17,815		29,264		20,928	14,398				
	11 0 1 1 01 1	37,365	32,210	14,644	25,723	15,676	10,960	12,529	11,250		27,894		13,514	11,290				
Azy lune luty	No Data in Status	67,155	32,413	24,525	23,132	19,164	8,563	13,241	11,143		24,740	19,556	14,871	14,115				
lune	No Data in Status	67,133		15,795	13,626	13,713	8,879	8,696	8,149		19,506	18,757	16,154	10,343				
une			36,568					8,617	7,717	10,072	14,351	17,065	9,445	18,670				
une uty ugust	No Data in Status	34,951 26,364	36,566 33,050	16,452	11,536	13,781	9,692	8,01/										
une uly ugust september October	No Deta in Status No Deta in Status	34,951			11,536 11,424	13,781 12,125	9,692 9,935	7,027	7,752		19,256	21,411	15,280	28,526				
une uly ugust september	No Data in Status No Data in Status No Data in Status	34,951 26,364	33,050	16,452							19,256 26,044							+
une uty ugust eptember ctober ovember	No Data in Status No Data in Status No Data in Status No Data in Status	34,951 26,364 49,826	33,050 30,921	16,452 18,006	11,424	12,125	9,935	7,027	7,752	10,959 11,921		21,060	15,280 12,162 278,497	28,526 20,909 233,730	73,998	3,945,709	Total Volume Pum	ped